Spanish Immersion Materials and the Secondary Classroom Ecology

A PLAN A MASTERS THESIS
SUBMITTED TO THE FACULTY OF THE
UNIVERSITY OF MINNESOTA
BY

Corinne S. Mathieu

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF ARTS

Diane J. Tedick, Advisor

May 2017

Acknowledgements

I am grateful for the support and guidance that I received from many important people while writing this thesis. First of all, I would like to thank my adviser, Dr. Diane Tedick, who answered my many questions at each step of the research process and whose excellent feedback on earlier drafts of my writing was instrumental in helping me reach this final product. In addition, I appreciate the feedback and support that I received from my other committee members, Dr. Mandy Menke and Dr. Elaine Tarone. Their questions and comments encouraged me to examine my work with fresh eyes, and I am grateful for their nuanced perspectives. I am also indebted to John and his students for allowing me to observe their classroom. Without a teacher who was willing to welcome me into his class, this research would not have been possible. Finally, I would like to thank my parents for their encouragement when the writing seemed overwhelming, and I particularly thank my partner, Jacob, for being a sounding board as I processed the entirety of this thesis out loud at one point or another along the way.

Abstract

This thesis examines the roles of materials in the classroom ecology of one seventh-grade social studies Spanish immersion class. Research has shown that dual language and immersion (DLI) teachers often feel challenged to find and use appropriate materials effectively; however, no previous studies have used classroom-based data to examine the realities of the affordances provided by materials in the immersion classroom. Data were collected through classroom observation, audio-recordings, and teacher interviews. Findings revealed that the materials played central, and sometimes unexpected, roles in the classroom ecology. Their structures and uses often promoted a monologic, "one-correct-answer" instructional paradigm that led to limited language instruction, constrained student discourse, and fact-centered performances of knowledge. Based on these results, implications for overall language development, vocabulary instruction, materials development and immersion teacher education are discussed. Recommendations are also made for future research focusing on materials use in immersion classrooms.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction and Background

Within the past few decades, the number of dual language and immersion programs has dramatically increased in the United States (Lenker & Rhodes, 2007). While considerable research has investigated academic and linguistic outcomes (see Lindholm-Leary & Genesee, 2014, for review), best practices for immersion pedagogy (see Lyster & Tedick, 2014, for review), and at least one study has explored the lived experiences of immersion teachers (Cammarata & Tedick, 2012), to my knowledge, no studies have examined the roles that classroom materials play in either one-way or two-way immersion classrooms in the United States. The limited classroom-based research on materials in other language learning contexts has shown that materials can affect the curriculum, the classroom discourse, students' attitudes toward learning, and language learning itself (Cangarajah, 1993; Guerretaz & Johnston, 2013; Miguel, 2015; Yakhontova, 2001). This study applies this previous work to a new context, a secondary classroom in a language immersion continuation program, in order to examine how materials affect that complex learning environment.

Dual language and immersion programs in North America are a form of content-based instruction (CBI), an umbrella term for curricular approaches that integrate content and language. CBI programs in the United States span the continuum from content-driven to language-driven models (Met, 1999). In content-driven CBI classrooms, such as the one examined in this study, student learning of content is the main priority, with language acquisition as a secondary goal (Met, 1999). The target language is the vehicle through which content is learned, rather than a separate focus of study. In order for students in

content-driven CBI programs to reach expected levels of both academic achievement and target language proficiency, language use and content learning must be intentionally integrated throughout classroom materials and pedagogy (Lyster, 2007).

Pedagogically similar to the CBI approach in North America, content and language integrated learning (CLIL) programs in Europe and South America utilize a "dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language" (Coyle, Hood & Marsh, 2010, p. 1). Despite their underlying similarities in teaching content through a second language, applying research across CBI, immersion, and CLIL is somewhat controversial as some scholars consider the contexts to be unique (Coyle, 2008; Pérez-Cañado, 2012) while others find such claims to be overstated (Cenoz, Genesee & Gorter, 2013). Recent research comparing classrooms from CLIL programs in Spain, to French immersion in Canada, and to Japanese immersion in the United States found more similarities in terms of context and teachers' use of corrective feedback between the Japanese immersion and CLIL programs than between the two immersion programs (Llineras & Lyster, 2014). This finding supports Dalton-Puffer's (2011) assertion that the terms CLIL and immersion more accurately describe cultural and political frames of reference than the characteristics of any given program. This paper draws on research from both CLIL and immersion programs, as the broader issues of teaching content through a second language are comparable across contexts and more work on materials in CBI has been conducted in the CLIL context.

Finding appropriate classroom materials and utilizing them effectively presents a unique challenge for the CBI/CLIL educator, as materials must serve the dual functions of supporting the achievement of expected academic outcomes as well as fostering second language development (Morton, 2013). Materials should be carefully designed, then, to be both cognitively and linguistically accessible (Moore & Lorenzo, 2007). This is particularly difficult at the secondary level where academic content becomes considerably more complex, requiring advanced academic language (Schleppegrell, 2001). Studies have shown that majority language students' linguistic proficiency can plateau in immersion programs at the secondary level (Fortune & Tedick, 2015). Moreover, although their proficiency is much higher than that of peers in traditional foreign language programs, their second language is often non-targetlike grammatically, lacking in lexical specificity, and non-idiomatic in terms of pragmatic choices (see Lyster, 2007, for review). Although minority language students in two-way immersion programs generally achieve balanced bilingualism by Grade 5 (Howard, Christian & Genesee, 2004), they may also develop inaccuracies in their Spanish, such as a more limited use of the subjunctive and conditional moods than is usual for native Spanish speaking peers (Potowksi, 2007). Such lower overall language proficiency (for language majority students) and incomplete acquisition and/or attrition (for minority students) (Montrul & Perpiñán, 2011; Montrul & Potowski, 2007) leads to concerns that secondary immersion students may not have the language skills necessary to access the academic content that is presented in published classroom materials.

Secondary CBI teachers, then, face great challenges in finding authentic, engaging materials at an appropriate linguistic level for their students. They fear that English L1 students are unable to fully access the academic content of Spanish science or social studies textbooks that utilize academic vocabulary and structures (Hernández, 2015). Similarly, authentic literature and other reading materials are often demanding for students to read independently, and teachers report struggling to encourage English L1 students to read in Spanish when both the themes and vocabulary may be unfamiliar (Hernández, 2015).

Although some research has noted educators' concerns about pedagogical materials for CBI/CLIL instruction, both at the elementary (Bovellan, 2014; Cammarata & Tedick, 2012) and secondary levels (Cammarata, 2009; Hernández, 2015), no studies have examined through direct observation the roles these materials play in the secondary immersion classroom. In order to develop educational materials that better meet the unique needs of secondary immersion students, it is important to understand the types of affordances offered by materials in the immersion classroom. Without understanding how materials are used to support all aspects of pedagogy, from introduction of material to assessment (Banegas, 2012), researchers cannot effectively support best practices in development and use of immersion classroom materials. By entering a secondary immersion classroom and observing how the materials affect the realities of the classroom ecology, this study builds a more nuanced and first-hand understanding of the challenges and successes of secondary immersion materials.

The Present Study

The goal of this study was to explore the affordances that pedagogical materials presented in one secondary Spanish immersion classroom's ecology. The study employed the theoretical framework of the classroom ecology (van Lier, 1997, 2004) in order to approach the classroom as a unique space of complex, intertwining relationships in which materials supported and/or inhibited affordances for instruction and learning of both content and language. The study took place in a one-way secondary Spanish/social studies immersion classroom at Trout Creek Middle School, [1] a large, suburban middle school in the Midwest. Case study methodology was utilized to focus on a single classroom in order to provide a rich description of the phenomenon of materials use within one classroom ecology.

Research Questions

The research questions investigated in the study are as follows:

1. What role(s) do pedagogical materials play in the ecology of a secondary Spanish immersion classroom?
    a. What role(s) do the pedagogical materials play in the content instruction?
    b. What role(s) do the pedagogical materials play in the target language instruction?
    c. What role(s) do the pedagogical materials play in content and language integration?

[1] Pseudonyms are used throughout this paper for the school as well as all participants.

d. What role(s) do the pedagogical materials play in language use in the classroom?

Description of the study

In order to gain a full understanding of the realities of materials use in the immersion class, data were collected from multiple sources. Classroom observations were conducted for the entirety of a 10-day seventh-grade social studies unit, with approximately 14 hours of lessons observed. Classroom discourse was also captured through audio-recordings. Finally, the teacher was interviewed twice, once before and once after observations, as a means of exploring his perspective on the challenges of immersion materials as well as the materials that he employed during the unit. Adapting definitions from Johnston (2007) and Tomlinson (1998), for this study, materials are defined as any artifacts that provide direct input while prompting the learning of content subject matter and/or the learning and use of language. This purposefully broad definition encompasses a wide range of artifacts, including but not limited to textbooks, short readings, worksheets, videos, PowerPoint presentations, and audio-recordings.

Significance of the Study

This study builds on previous work that has clearly demonstrated that the lack of access to appropriate pedagogical materials for CBI classrooms as well as a frustration in how to manipulate and use those materials effectively pose difficult challenges for CBI educators (Cammarata, 2009; Cammarata & Tedick, 2012). It expands upon earlier research by utilizing classroom observations as the main data collection method in order to gain a first-hand account of the roles materials played in one Spanish immersion

classroom. To the best of my knowledge, this is the first study in the immersion context to examine the realities of the materials in the classroom through classroom observation. Although it is crucial to gain understanding of teachers' perspectives and experiences with materials through interviews, by entering the classroom space, this study will move our knowledge even further by examining how materials are actually employed in the classroom. My hope is that this study will serve as a catalyst for further research into materials use in the immersion classroom in order to inform materials development, immersion teacher professional development, and immersion pedagogy in the future.

Overview of the Thesis

Chapter 2 of the thesis reviews previous literature related to issues of language in the immersion classroom, materials in CBI/CLIL contexts, materials use in the language classroom, and the theoretical framework of classroom ecology. Chapter 3 explains in detail the methodology used to conduct the study. Chapter 4 presents the findings of the data obtained through classroom observations, audio-recordings of classroom discourse, and interviews with the teacher. Chapter 5 includes a discussion of the data in relation to the research questions, implications for secondary immersion pedagogy, materials development, and teacher professional development, and suggestions for future research.

Chapter 2: Review of the Literature

Since their inception in the 1960s, language immersion programs have been widely studied from the perspective of academic and linguistic achievement because initial research on these programs was concerned with validating their value as educational systems. Other research and literature has focused on best practices for immersion pedagogy as well as immersion teachers' lived experiences. Much of this research has occurred in at the elementary level, while the secondary level remains considerably understudied. The literature from the immersion contexts has consistently identified several issues regarding language instruction, language use, and content and language integration that will inform the focus of this study as it will be valuable to gain insight into how materials impact these processes.

Despite reports that finding and using appropriate materials constitutes a challenge for immersion educators, no previous research in the United States has focused on immersion materials as the object of the study. Much of the research on CBI/CLIL materials has utilized interviews or surveys to explore how teachers adapt and use materials in their classrooms. This literature is important for laying a foundation of the issues that educators perceive to be the most pertinent regarding the materials that they use. Furthermore, of the studies examining materials from other second language education contexts, such as English as a Second Language (ESL), or foreign language classrooms, only a few studies have actually looked at the realities of materials use in the classroom. These studies have shown that materials greatly impact many facets of the classroom, including the curriculum, the classroom discourse, student identity, and

language learning. This classroom-based research is of utmost importance to this study as it highlights the complexity of materials as they interact with other pedagogical and social forces within the classroom.

I begin this chapter by exploring the salient issues regarding language instruction and language use in the immersion classroom. I then turn to the topic of content and language integration, as this is an ever-challenging but necessary component of a truly successful immersion program. The review then shifts focus to look at materials in the CBI and CLIL contexts before exploring classroom-based research on materials from other language learning contexts. Finally, I will introduce the theoretical framework of classroom ecology, which is the lens through which the data are analyzed.

Issues of Language in the Immersion Classroom: Language Use and Content and Language Integration

As stated in Chapter 1, the productive target language skills of English home language students in dual language and immersion classrooms is often non-native like, lacking in grammatical accuracy, lexical variety and specificity, and sociolinguistic appropriateness (see Lyster, 2007 for review). In an effort to understand the factors affecting immersion students' L2 language development, studies have focused on teachers' and/or students' language use in the classroom (e.g., Broner, 2001; Fortune, 2001, Potowski, 2004) as well as teachers' challenges with integrating language and content in their curricula and pedagogy (Fortune, Tedick & Walker, 2008; Cammarata & Tedick, 2012, Walker & Tedick, 2000). Target language development is vital in immersion programs because it is through language that students receive, analyze and present their knowledge of academic content (Schleppegrell, 2004). Although materials

are integral to the curriculum and instruction of most language classrooms, no previous research has examined how materials affect language use and content and language integration in immersion classrooms.

Language use in one-way immersion programs. In one-way immersion classrooms, the vast majority of students share the community's dominant language, English in the United States. Regardless, the teacher and students are expected to remain in the target language during the designated instructional time. In one-way immersion classrooms, the teacher's output represents a considerable amount of the target language input that students receive. Research shows that immersion teachers, who often have native or near-native proficiency levels in the target language, consistently remain in the target language during the appropriate instructional time (Genesee, 1987 as cited in Fortune, 2001; cf. McMillan & Turnbull, 2009). Swain (1988), however, demonstrated that immersion teachers' language use is functionally restricted since certain uses of language do not naturally occur in the classroom setting, and teachers rarely construct opportunities for focused linguistic instruction outside of the content demands. If the teacher's language use is functionally restricted, students may not receive the input necessary to acquire the full grammatical and pragmatic range of the target language.

Many studies that have examined student language use in immersion classrooms have shown that students' choice of language is impacted by a number of factors, including interlocutor, individual language proficiency, communicative purpose, and content of the task (Blanco-Iglesias, Broner & Tarone, 1995; Broner, 2001; Broner & Tedick, 2011; Fortune, 2001; Lyster, 1987; Parker, Heitzman, Fjerstad, Babbs & Cohen,

1995; Swain & Lapkin, 2000; Tarone & Swain, 1995). While it might be assumed that as students progress through an immersion program their tendency to remain in the target language would increase, research has shown that the opposite often occurs. Initial informal observations across several grades in a one-way Spanish immersion program showed that students in second grade were most likely to remain in the target language (Blanco-Iglesias et al., 1995), whereas students in fifth and sixth grade only used Spanish for task-oriented situations, almost never conducting social interactions in the target language (Parker, et al., 1995). In addressing the results of these studies in tandem with reports from various immersion teachers, Tarone and Swain (1995) argued that the immersion classroom is diglossic, meaning the second language is reserved for formal, content-orientated output while the majority first language is used for informal, social interactions. Based on an interview with a French immersion graduate, Tarone and Swain (1995) hypothesized that one-way immersion programs do not provide students enough opportunities to develop the social, vernacular language that they need to express themselves and their developing identities as they reach the later elementary grades. Later studies revealed that the factors influencing student language choices are even more complicated. Broner and Tedick (2011), for example, found that the language use of three focal fifth-grade students was influenced by the type of task, with more Spanish used during creative writing and language-related tasks; the interlocutor, as English was used with friends for different purposes; and other individual factors, such as a desire for good grades.

Although it is doubtful that the materials used in the one-way Spanish immersion class will address the variety of factors that impact student language use, questions of how different tasks affect language use could emerge prominently when focusing on materials. By looking at how Grade 8 French immersion students in Canada used their L1 (English) while completing two distinct cooperative tasks, Swain and Lapkin (2000) provided another perspective to student language use. French immersion students in Canada were asked to complete either a jigsaw activity or a dictogloss, the former providing a visual stimulus and the latter an oral text stimulus to promote the writing of a story. While conducting the activities, the students used the L1 (English) for three main purposes: moving the task along, focusing attention, and interpersonal interaction. Statistical analysis of the student turns showed that the two tasks, the jigsaw activity and the dictogloss, engendered similar percentages of English turns, with no significant differences between the tasks. Furthermore, in both tasks the L1 was used most frequently for task management, with no significant differences between tasks in terms of language functions used. A further analysis of the quality of the writing in the final product, both in terms of content and language, showed that although students who used less L1 received higher scores on the writing, other variables, such as the task itself, affected the effect of L1 use on performance. There was a significant negative correlation between the percentage of L1 turns and the language and content ratings of the jigsaw task, whereas there were no significant correlations found for the dictogloss task. Swain and Lapkin (2000) also acknowledged the considerable amount of variation of L1 use among dyads. One of their conclusions was that “when used within a pedagogical

context, different task types may generally provide greater or lesser needs for different uses of the L1" (p. 267). Given that materials such as textbooks often provide tasks through which the students might improve understanding, these data suggest that it is possible that the pedagogic materials may affect students' language use, depending on how the teacher employs those materials.

Content and language integration in dual language and immersion instruction. Following Swain's (1988) argument that content teaching alone is not good language teaching, CBI researchers have argued that the immersion classroom needs to be a language and discourse-rich environment (Allen, Swain, Harley & Cummins,1990; Genesee, 1987; Lyster, 2007; Swain, 1996). Effectively integrating language and content throughout the immersion curriculum and classroom is essential for language development as well as academic achievement. Unfortunately, multiple studies addressing teachers' experiences with content and language integration have shown the process to be riddled with challenges (Cammarata & Tedick, 2012; Fortune et al., 2008; Walker & Tedick, 2000). Significant to the present study, a lack of appropriate resources has been mentioned as one barrier to effective integration; however, no studies have focused directly on the affordances that classroom materials provide regarding content and language integration.

Integrating content and language can occur proactively in the form of curriculum and lesson design and reactively in the form of corrective feedback (see Lyster, 2007 for a review). For the purposes of this study, only proactive methods will be addressed because choices of materials occur in the proactive planning phases. In the late 1980s,

Snow, Met and Genesee (1989) drew on the success of immersion programs in Canada to outline a conceptual framework for integrating content and language in the second and foreign language classroom. The authors argued that desired levels of language proficiency will not be achieved through the teaching of content alone, but rather through the intentional and planned coordination of a language curriculum within the content.

In order to successfully carry out the careful balance between language and content, Snow et al. (1989) proposed that teachers should design language objectives that are derived from the content curriculum, the language curriculum, and the ongoing assessment of learners' academic and communicative needs. They introduced two categories for language objectives: content-obligatory and content-compatible. Content-obligatory language is language that is necessary to access the subject matter content of the lesson, and these objectives are derived directly from the content objectives. Content-compatible language can be taught within the context of the content at hand, but is not required for successful mastery. Immersion teachers naturally incorporate content-obligatory language into their content lessons in order for their students to access the material, but often do not develop content-compatible objectives (Snow et al., 1989). The foundation of this conceptual framework is that it promotes an intentional examination of language as the vehicle for academic content, directing teachers to think about the differentially difficult functions and forms that students need to be academically successful.

By placing direct attention on how teachers think about integrating language and content in their practice, Fortune et. al (2008), demonstrated that teachers' perceptions do

not always match the conceptual framework described previously, nor is the framework sufficiently straightforward to implement seamlessly in practice. Through interviews, videotaped classroom sessions, teachers' audio-taped reflections on their teaching, and a focus group meeting, Fortune et. al (2008) explored the practices and understandings of six Spanish immersion teachers. Findings showed that teachers perceive themselves as always teaching language, and the videos showed teachers attending to language when pushing students toward specificity in their vocabulary and accuracy in their verb use. It is important to note, however, that references to language teaching were limited to vocabulary and verbs, with little mention of other forms or functions that students might need to access complex content. Furthermore, teachers' reflections showed that they gave prominence to content over language, typically describing their lesson in terms of content objectives rather than a language focus. Only one teacher explicitly mentioned planning for a specific grammatical structure in the content lesson.

Building on the work by Fortune et al. (2008), Cammarata and Tedick (2012) conducted a phenomenological study of three immersion teachers (one elementary, one middle school, and one high school) who had completed a professional development program that emphasized curriculum development and instructional strategies specific to integrating content and language in immersion classrooms. Through interviews and "lived experience descriptions" (van Manan, 1997, as cited in Cammarata & Tedick, 2012), the researchers sought to understand what the experience of balancing content and language *means* to the immersion teacher. The findings showed that learning to balance content and language is a "pedagogical journey whose success is intricately linked to the

quest and challenge of figuring out what language to focus on in the context of content instruction" (Cammarata & Tedick, 2012, p. 257). First and foremost, immersion teachers experience a change in identity, which also might entail new beliefs about one's role as a teacher, when viewing themselves as both content and language teachers. Along with changing beliefs, immersion teachers face the challenge of finding room and time within the curriculum to incorporate a language focus, as well as a lack of adequate planning time and pedagogical materials. Important to the present study, teachers reiterated that few materials exist that are designed to integrate content and language, meaning teachers must develop their own resources when wanting to attend to language. Also relevant to the present study, Cammarata and Tedick found that the high school teacher expressed more clarity than the elementary teachers in acknowledging an awareness of the interdependence of language and content. This may be because secondary teachers see first-hand the need for sophisticated linguistic skills in order to process the higher cognitive demand of the academic content.

By examining the issues of language use and content and language integration through a classroom-based ecological perspective that employs pedagogical materials as a focal point, this study provides a new lens for understanding these complex topics. Previous research has made it clear that challenges around language development in the immersion classroom are multifaceted. Gaining perspective as to how classroom materials help or hinder the development of the target language may provide a new insight into improving teacher training as well as immersion materials development.

Materials in CBI and CLIL Contexts

In the United States, the lack of appropriate materials for CBI was initially identified in bilingual education classrooms in the 1980s (Mahone, 1985). During a middle school bilingual materials development project in California, a collaborative team noted that very few materials that effectively represented the local context, both for relevant academic content and linguistic variation, were available for a seventh-grade social studies class. In the conclusion of the project, the team called for intensive professional development to help educators become better materials developers in order for overwhelmed educators to be more efficient and effective in their work (Mahone, 1985).

Because materials specifically designed for CBI are not available, teachers often have to prepare their own. They can either produce original materials, utilize unmodified authentic materials, adapt authentic materials to better suit their goals and students, or translate texts from the mainstream curriculum (Cammarata & Tedick, 2012; Moore & Lorenzo, 2007). Although many materials such as videos, texts, and websites naturally integrate content and language, when teachers create their own materials, they need to be intentional about what language they use to teach content. This can be particularly challenging when teachers are not native speakers of the target language, as the quality of the language used is as important as how well it integrates with the content.

This additional work can be overwhelming and discouraging for teachers (Lyster, 2007; Moore & Lorenzo, 2015). In a phenomenological study examining foreign language teachers' lived experiences while participating in a professional development

program on CBI, Cammarata (2009) found that teachers were overwhelmed by the amount of time and planning required to design content-based curriculum. In his discussion, he suggests that professional development for teachers designing CBI curriculum should include practice adapting materials from existing textbooks. In another study investigating elementary and middle school immersion teachers' experiences in the same CBI professional development program, Cammarata and Tedick (2012) found that the absence of resources considerably impacted teachers' time and mental strength as they spent hours and energy translating texts and aligning curriculum based on available resources. As a result, the authors call for published materials and textbooks that balance language and content in tandem with curriculum frameworks so that the materials better support teachers in incorporating a natural, intentional integration in instruction.

Morton (2013) surveyed fifty-two CLIL teachers from four European countries in an effort to provide a snapshot of current practices of CLIL teachers as well as to give teachers a voice as to their concerns regarding CLIL materials. Data analysis revealed four main categories of concerns held by teachers regarding materials: materials and learners' needs, design and content of materials, materials and workload, and cultural and contextual issues. Data that addressed teachers' practices regarding materials demonstrated an overwhelming preponderance for teachers to either adapt authentic non-textbook materials for their classrooms or to create their own materials. Furthermore, in open response questions regarding what teachers do not like about materials they have used, the most frequently cited concern was that materials are not appropriate for their students, both in terms of linguistic difficulty and cognitive challenge. These responses

are comparable to the previously noted concerns about materials for CBI programs while adding further nuance as to how CLIL teachers are addressing the dearth of materials in practice. A limitation to this study, however, is that it relies on self-reporting from teachers rather than observing the adaptations that are occurring in a live classroom. Furthermore, this study did not seek to address the quality of the materials adapted or created by teachers.

In a more practice-based study, Moore and Lorenzo (2007) investigated how CLIL teachers adapted a short text to better suit the linguistic levels of their students. Teachers were provided a specific text and asked to adapt it for a hypothetical group of students for whom the linguistic level of the original text was too challenging. Each of the adaptation techniques that teachers employed to make the material comprehensible-simplification, elaboration and discursification[2] – sacrificed either linguistic complexity, cognitive complexity, or discourse style. Their study is only an introduction to the reality of teacher adapted texts, but it does further underscore the need for intentionally designed materials as well as professional development that incorporates practice in materials adaptation. Similar to the Morton (2013) study, this study was limited in that the adapted texts were not subsequently used in classrooms, and so the effects of the various style of adaptations on other classroom dynamics, such as student discourse or student learning, cannot be known.

[2] *Discursification* is an approach to adapting a text in which the message itself is modified to be more accessible to the students. The adapted text may be a different genre, such as pedagogic instead of scientific, and will often include interactional devices like explicit evaluations and rhetorical questions (Moore & Lorenzo, 2007)

Bovellan (2014) investigated Finnish primary CLIL teachers' beliefs about language learning in part by examining how they adapt materials for their classroom. For the purpose of the present study, the results regarding teachers' experiences adapting and designing materials are most relevant. Similar to findings about academic texts at the secondary levels in two-way Spanish immersion (Hernández, 2015), these teachers commented that the level of language in scientific texts found online is often too challenging for their students and must be modified. Bovellan also found that teachers used the same methods of adapting texts, simplification, elaboration and discursification, as outlined by Moore and Lorenzo (2007). However, many of the Finnish teachers also designed materials completely from scratch or translated directly from Finnish textbooks. In the analysis of why teachers manipulate materials in different ways, Bovellan concluded that the variety of strategies reflects the difficulty of determining the most appropriate type of material design for CLIL. Furthermore, teachers with training in CLIL had more methods for adapting materials than novice teachers, which echoes sentiments from the CBI context that better professional development in curriculum and material design is needed (Cammarata, 2009).

Materials in the Classroom

A common theme linking the previously mentioned studies is that CBI/CLIL materials are often studied as distinct entities removed from the realities of the classroom experience. Most of the previous research touching on CLIL materials has fallen into four main categories: investigation of how teachers choose and manipulate materials (Bovellan, 2014; Moore & Lorenzo 2007), lived-experience interview-based studies on

teachers' perspectives of materials (Bovellan, 2014), content analyses of materials removed from the classroom (Banegas, 2014), or investigation of overall professional development needs for CLIL teachers (Banegas, 2012; Moore & Lorenzo, 2015). Studies from the CBI context that refer to classroom materials are rarer and have focused on the lived experiences of teachers as well as professional development challenges (Cammarata, 2009; Cammarata & Tedick, 2012).

Due to the lack of research on materials in CBI contexts, it is useful to turn to research conducted on teachers' use of materials in traditional foreign or second language classrooms. The results of studies from foreign and second language classrooms in which the target language is the main content of the course are not directly applicable to the CBI context; however, it is beneficial to examine the trends in how materials have been analyzed when designing a study for a dual language or immersion classroom.

Although materials are an integral component of most language classrooms, the vast literature on language learning materials includes only a few classroom-based studies on how those materials are used by teachers or engaged with by students. This has been noted as a considerable challenge in the materials development process, as little is known about what teachers actually do with materials that they are given (Tomlinson, 2012). Furthermore, Harwood (2010) argues that qualitative classroom-based research is necessary to advance applied linguistics research regarding pedagogical materials. Garton and Graves (2014) echo this call, asserting that "any view of materials that neglects their actual use by teachers and/or learners can, in our view, only be partial" (p. 654).

Two classroom-based studies from the context of ESL instruction in non-Western countries have focused on the pedagogical use of materials in actual classrooms. First, Canagarajah (1993) utilized critical ethnography to examine Tamil students' attitudes and experiences in a mandatory ESL class in Sri Lanka. While conducting intensive participant observation as the teacher of the class being studied, Cangarajah also situated other methods of data collection, such as free-writes, questionnaires, and interviews, at key intervals throughout the eight-month course. Canagarajah found that students resisted the communicative orientation of the textbook used in the class, but that this resistance was not representative of their motivation toward learning English. In his study design, Cangarajah purposefully employed multiple methods of data collection in order to triangulate the data. This is particularly important when qualitatively examining a complex phenomenon like students' attitudes toward a language class and language materials.

In a later study, Yakhontova (2001) examined Ukrainian students' attitudes toward a new ESL course and American textbook focused on academic writing. Similar to Cangarajah, Yakhontova employed participant observation as one of her data collection methods as she was teaching the courses in which the textbook was used. Along with her observations, Yakhontova also asked students to express their opinions on the textbook in a short essay based on questions from a questionnaire as well as a brief anonymous survey. Through data analysis, Yakhontova found that learners generally reacted positively to the unfamiliar language learning methods and goals used in the American textbook. However, they responded negatively to unfamiliar cultural

references. Furthermore, it was clear that students' responses to the textbook were mediated by factors from their local intellectual context, such as a "predisposition towards treating writing as primarily a verbal activity" (Yakhontova, 2001, p. 411). Yakhontova concluded that textbooks designed in the American context are not entirely appropriate for a Ukrainian university and that modification to the texts should be made to better represent the cultural and intellectual contexts of the students. Interestingly, similar calls have been made from the CLIL context in which global English textbooks that do not represent the geographical or cultural context of the CLIL classroom are sometimes employed (Banegas, 2014).

More recently, Miguel (2015) analyzed how three Spanish Teaching Assistant's (TAs) used a required textbook while teaching different sections of a fourth-semester language course at an American university. In the data analysis, Miguel drew on McDonough et al.'s (2013) list of adaptation techniques and Shawer's (2010) classification of levels of curriculum delivery. Results showed that the textbook was used in a very linear manner, directly guiding the curriculum of the course. Although the TAs employed four of the five techniques for textbook adaptation, deleting was used much more frequently by all three TAs than other modifications due to outside time constraints. In interviews, the TAs shared that their motivations toward textbook adaptation were affected by time as well as their personal values regarding language teaching, such as focusing only on grammar or incorporating cultural and literary topics as well. This last point is pertinent in that research on immersion educator's experiences has shown that teachers' conceptualizations of their roles greatly impact how they organize and instruct

their lessons. For example, many immersion teachers see themselves first and foremost as content teachers since their licenses are in content areas and they are held accountable for their students' achievement in subject matter above language proficiency (Fortune et al., 2008; Walker & Tedick, 2000). It is quite likely that this perspective will have an impact on the materials teachers choose and how they adapt and use them.

In an effort to expand the literature of classroom-based research on language learning materials, Guerrettaz and Johnston (2013) examined the relationship of classroom materials to the entirety of the classroom experience in an ESL grammar class at an American university. Guerrettaz and Johnston (2013) stressed that materials do not serve a classroom in isolation but rather function in the "complex web of relationships" found in any learning environment (p. 730). They employed the concept of classroom ecology (Tudor, 2001; van Lier, 1996) and used classroom observations to examine the affordances that the materials offered. An analysis of data demonstrated that materials played a central role in three elements of classroom ecology: the curriculum, classroom discourse, and language learning. To elaborate, for the one classroom studied by Guerrettaz and Johnston, the textbook was the primary source for the organization of the curriculum, including the progression and focus of content. Furthermore, the materials clearly directed the type and amount of discourse produced by the students and teacher, particularly when the types of activities were considered. Finally, Guerrettaz and Johnston suggested that the relationship between the materials and the characteristics of individual learners was critical to language learning.

Although the main artifact focused on by Guerrettaz and Johnston, a single English grammar textbook, is quite different from the materials found in secondary immersion classrooms, the present study draws heavily on their study conceptualization and design. The concept of classroom ecology is quite pertinent to the immersion classroom in which all facets of the classroom, such as curriculum, discourse, and learning, should be approached with the mindset of interweaving language and content. Moreover, Guerrettaz's and Johnston's assertions that the textbook affected curriculum design, classroom discourse and language learning are relevant to the immersion classroom since issues of best practices for target language development remain at the forefront of the research agenda.

Theoretical Framework: Classroom Ecology

This study employs the theoretical notion of *classroom ecology* as the lens through which it examines the complex relationship between the materials and one secondary social studies immersion class. Van Lier (2004) describes an ecological approach to research as one that "take(s) account of the full complexity and interrelatedness of processes that combine to produce an environment" (p. 4). To this end, the ecological perspective of language learning draws on chaos/complexity theory (Larsen-Freeman, 1997) to view the language classroom as an unpredictable ecosystem of interactions through which a complex social system emerges. An ecological orientation treats this social system as one that is shaped by the *participants, artifacts, processes* and *structures,* or "ecological resources" (Guerrettaz & Johnston, 2013) of the classroom.

Participants are the individual people who participate in the day-to-day classroom experience: namely the teacher and students. *Artifacts* are the physical entities that have a significant presence in the classroom, such as the materials or the Smartboard. Next, *processes* and *structures* refer to the more abstract elements of the classroom. Guerrettaz and Johnston (2013) define *processes* as the "systematic series of actions or activities that take place in a directed manner, or towards some end" (p. 782). Examples of overarching processes in the immersion classroom include content teaching and language teaching, but processes can also be more micro, such as classroom routines like a daily bell ringer activity. Distinct from *processes* and *artifacts*, which are under the instructor's control, *structures* are the impersonal, organizational forces that reflect the dominant ideologies, policies and norms at play in the classroom context. Depending on the context, examples of the *structures* in an immersion classroom include the curriculum, schoolwide language use policies, or discourse routines such as the Initiation-Response-Feedback (IRF) sequence.

The classroom ecology focuses on the relationships between and among these elements. These relationships provide affordances, which are defined as "a relationship between an organism (a learner, in our case) and the environment, that signal an opportunity for or inhibition of action" (van Lier, 2004, p. 4). A second, simpler definition is that affordances are "what is available to the person to do something with" (van Lier, 2004, p. 91). Affordances, therefore, are a type of opportunity given by the environment that a person might pick up or act upon. In this way, affordances are conceptualized as a possible beginning for the meaning-making process, which involves

engagement between the learner and the environment. It is important to note, as mentioned above, that affordances can enable or constrain learning by providing both opportunity for and inhibition of action (van Lier, 2004).

In conjunction with affordances, the ecological approach also employs the concept of emergence, "a reorganization of simple elements into a more complex system" (van Lier, 2004, p. 81). In contrast to the linear cause and effect posed by traditional scientific research, emergence implies a "non-reductive change" (van Lier, 2004, p. 82), in which unique lower-level elements do not alone make up the higher-level elements, and yet they are the foundation from which the higher-level is built up. For example, the whole of a student's knowledge about a topic can rarely be traced directly back to a specific activity or reading, but rather emerges from the totality of all the activities, classroom discourse, background knowledge, or outside of school conversations that occurred over time. In the context of language acquisition, the concept of emergence argues that "evidence of learning…cannot be based on the establishment of causal (or correlational) links between something in the input and something in the output" (van Lier, 1997, p. 786). Emergence is particularly relevant to the immersion context in which language acquisition was believed historically to occur by virtue of the copious amounts of input (Krashen, 1982). In contrast, an ecological approach asserts that all actions and relationships are affected by interrelated factors and that final elements, such as language acquisition or content mastery in the case of immersion, cannot simply be reduced to one point of initial input.

An ecological perspective focuses on the actual reality as it is lived out in the classroom, regardless of the intentions of stakeholders such as administrators, teachers, or even materials publishers. While Morgan and Martin (2014) argue that research questions proposed through this theoretical framework should "look at all relations (i.e., affordances) between materials and other classroom/program features and assess their learning opportunities within the overall system" (p. 669), they also acknowledge that studies that examine only a piece of the system, such as the present study, are beneficial to furthering the metaphor of "classroom-as-ecosystem" (p. 667).

This study resides in the theoretical approach of *classroom ecology* by focusing on materials within the ecosystem of one classroom rather than by examining one classroom within the larger, programmatic ecosystem. Furthermore, an ecological perspective of teaching focuses on the *local* reality, with decision-making, such as choice of materials and curriculum, occurring through a perspective of the situational reality of each program (Tudor, 2003). Previous studies have demonstrated that finding and using materials that are appropriate to the local context is a specific challenge for CBI and CLIL programs (Banegas, 2014; Mahone, 1985). Therefore, it is beneficial to use an ecological perspective that intentionally focuses on the local reality when seeking to understand the relationships associated with materials in a given classroom.

The present study draws on Guerretaz and Johnston's (2013) in understanding *classroom ecology* to encompass the "totality of interrelations between elements" in the immersion classroom (p. 783). The immersion classroom is by nature a complex and complicated space in which teachers and students constantly juggle focusing on content

and language. The ecological approach understands that a classroom is made up of interlocking elements and relationships, none of which can be fully understood in isolation or removed from their contexts. Looking at immersion materials through this lens allows the researcher to simultaneously examine the actual use of materials by teachers and students while also analyzing how the materials interrelate to other essential dynamics of the classroom, which in the case of this study include content teaching, language teaching, language use, and content and language integration.

Chapter 3: Methodology

As the literature reviewed in Chapter 2 shows, classroom materials can play a vital role in the dynamics of the language classroom; however, the lack of appropriate materials and resources are consistently cited as a cause of concern for immersion educators. Despite these well-documented concerns about immersion materials from educators themselves, no existing research has examined the role that materials play in an actual immersion classroom. The purpose of this study is to explore the reality of how materials impact a single immersion classroom, in the form of a secondary Spanish immersion social studies class, in order to deepen our understanding of how to better prepare immersion teachers to use materials more effectively in their teaching as well as to inform materials development. The research question with sub-questions for the study are as follows:

1. What role(s) do pedagogical materials play in the ecology of a secondary Spanish immersion classroom?
    a. What role(s) do the pedagogical materials play in the content instruction?
    b. What role(s) do the pedagogical materials play in the target language instruction?
    c. What role(s) do the pedagogical materials play in content and language integration?
    d. What role(s) do the pedagogical materials play in language use in the classroom?

In this chapter, I will outline the context for the study in order to explain why I chose to conduct the research at Trout Creek Middle School (a pseudonym). Next, the methodology will be described with a focus on participant selection, data collection, and data analysis. Finally, I will discuss my positionality as the researcher in relation to the data and analysis.

Context – Trout Creek Middle School

Trout Creek Middle School is a large school in a suburb located in a large metropolitan area in the Midwest. It is one of two middle schools in the suburban district and is the only one with a Spanish immersion continuation strand. The students in the Spanish immersion program at Trout Creek had previously attended an elementary school with an early total immersion model. In an early total immersion program, the vast majority of the students speak the dominant language, English in the United States, as their first language, but instruction is nearly entirely in the target language, Spanish, for the first two to three years of school. Although elementary immersion programs may exist as a whole-school program, secondary continuation programs, such as the one at Trout Creek, are typically situated as a within-school strand in a larger, English-medium school. A strand program means that the Spanish immersion students attend school in the same building as other, non-immersion students and take specific classes in Spanish throughout the day. At Trout Creek Middle School, the Spanish immersion students could enroll in up to three different content classes delivered through the medium of Spanish, including social studies, science and reading/language arts. At the time of the study, Trout Creek Middle School had approximately 1,300 students, with 296 students in the

Spanish immersion program. In the whole school, approximately 58% of the student population was White, 24% of the population was African-American, and 11% was Hispanic. The demographics of strand immersion programs are often less diverse than those of the entire school; at the time of the study, the population of the immersion program at Trout Creek Middle School was 74% White, 9% African-American, and 13% Hispanic.

Trout Creek Middle School was chosen as the context for this study because its secondary continuation program is well-established with over twenty years of existence. For this study, it was important to collect data in a school in which the secondary continuation program is well-established, as newer programs often face implementation hurdles, such as accessing resources, that are gradually ameliorated over time. Because the focus of this study is the classroom materials themselves, it was preferable to observe a classroom in which an experienced teacher might have acquired and consistently incorporated a wider variety of resources.

Interpretive Case Study

I chose to use an interpretive single case study methodology for several reasons. Yin (2014) states that a case study is an appropriate study design when the research question is centered on the "how" or "why" of a phenomenon, when the investigator has little control over events, and when the focus of the study is a contemporary phenomenon in a real-life context. As such, my research questions were particularly suited to be answered through a case study because they ask *how* materials and the classroom ecology might mutually influence one another. Moreover, I have no control over the events of the

classroom as the researcher, and the questions investigate the phenomenon, classroom materials, directly in the context of a real-life classroom. Yin (2014) also argues that because case studies deal with a phenomenon and context that are often inextricably linked, the definition of a case study also includes technical characteristics related to data collection and analysis. To elaborate, case study inquiry "relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis" (Yin, 2014, p. 18).

In order to gain a deep understanding of the materials, I collected multiple forms of data, including observation notes, audio-recordings, interviews and the material artifacts themselves. In terms of theoretical propositions, the sub-questions to my central research question are based on previous literature regarding CBI and immersion classrooms, and both the data collection and analysis are based on tentative theories for materials in the classroom ecology proposed by Guerrettaz and Johnston (2013). In another way of understanding case study, Creswell (1998) states that it is an exploration of a system that is bounded by time and space. In this sense, the case of this study is the single Spanish immersion class, bounded in time by the academic unit in which data collection occurred. Finally, interpretive case study is a preferred design method within the theoretical notion of classroom ecology*,* as the concept of classroom ecology requires that one examine the phenomenon at the most local level, in this case, one secondary immersion classroom.

Although case studies are often employed for research in classrooms, this design method is not without controversy. The common critiques of case study research design are based on assumptions related to quantitative research and statistical methods, including arguments that case study results cannot be generalized to other contexts, case studies have a bias toward verifying the researcher's preconceived notions, and case studies cannot prove causal relationships between treatment and effect (Flyvberg, 2006; Yin, 2014). Although lack of generalizability has been identified as a limitation of case studies, as an exploratory study, this research does not propose to be directly generalizable to other immersion classrooms. Furthermore, the ecological approach conceptualizes each classroom as a unique ecosystem with dynamic and complex relationships. Tudor (2003) argues that "we have to look at classrooms as entities in their own right and explore the meaning they have for those who are present within them in their own terms, and not with reference to a situation – external and supposedly universal set of assumptions" (p. 4). While classrooms of like contexts may exhibit similar relationships, the very nature of a different teacher and/or students will always impact the ecological system in a unique, non-generalizable way.

A second critique of case studies is that the method contains a subjective bias, a tendency to confirm the researcher's preconceived notions. This critique stems from the misunderstanding that case studies are less rigorous than quantitative methods and thus allow more room for arbitrary judgements. An early response to this critique was the inclusion of triangulation of multiple data sources within a case study to strengthen internal validity (Bromley, 1986 as cited in Stoecker, 1991). More recently, Flyvbjerg

(2006) summarizes the work of numerous researchers who have conducted intensive, in-depth case studies and who typically report that their preconceived views and assumptions were proven wrong, and that the act of conducting the case study compelled them to revise their hypotheses. Furthermore, Flyvbjerg (2006) argues that small –*N* qualitative studies are often at the forefront of theory development. They are well-positioned to highlight falsification of theories since they employ intense observation through which unexpected diversity in results typically surfaces. In short, it is through the proximity to reality that is a requisite of the case study that the researcher gains knowledge that could not be learned any other way, therefore a rigorous case study is more likely to falsify preconceived assumptions rather than confirm them.

Finally, the interest in education research on randomized field trials to prove a causal relationship between a treatment and its effect has led to further questioning of the value of case studies, which can be designed to suggest, but not prove, cause and effect. While there is value to "true experiments" in educational research, those studies cannot fully explain the complexity that occurs in school systems, as it is impossible to account for the vast web of mutual influences among variables that may be at play in a classroom. Moreover, some methodologists suggest that experiments cannot fully explain "how" or "why" a treatment or intervention works, whereas a case study can better explore those issues with its proximity to reality (e.g. Shavelson & Towne, 2002 as cited in Yin, 2014).

Selection of the Participants

After Trout Creek Middle School was chosen as the context for the study and necessary legal permissions were attained from the school district and the University of

Minnesota's Internal Review Board (Appendix A), a specific teacher, John, was invited via email to participate in the study. John is of Caucasian descent and, at the time of the study, was in his late forties or early fifties. John was selected for this study because he was recommended by a University professor as a good, experienced Spanish immersion teacher. John had completed a Master of Education degree at the University of Minnesota based on graduate courses focusing on best practices for second language curriculum development and pedagogy. Furthermore, John had 18 years of experience working in Spanish immersion. Tsui (2003) indicates that less-experienced educators are more likely to rely heavily on the textbook whereas more experienced teachers are more selective in their use of resources and incorporate a wider variety of materials. With this in mind, I hoped that John's class might include a rich use of multiple different materials as is suggested for immersion classrooms (Hamayan, Genesee & Cloud, 2013).

After John agreed to participate in the study, we determined together which of his three classes would be best for data collection. The selected class was John's smallest class at the time of the study, with 24 students. The relatively smaller class was deemed most suitable for this study because it afforded me the ability to more easily observe the class's activities as well as audio-record the discourse. The students were all in seventh grade and could be assumed to be 11-13 years old. John did not provide exact data about his students, but he did share that most were from English-speaking families with two or three having one Spanish-speaking parent. In this class, twenty of the students were female and four were male, and this somewhat unique gender distribution occurred due to random scheduling and not by design. Before data collection began, I met with the class

to explain the purpose of the study and disseminate the required student and parent information sheets and consent/assent forms (Appendix B). No students in the class opted out of the study.

Data Collection

Data collection occurred in the same class period for ten consecutive days during a social studies unit on Africa that served as a general survey of the geography and history of the continent, divided into general geographic areas (Western and Central Africa, Southern and Eastern Africa, and Northern Africa). It was important for data collection to occur from the first to last days of the unit in order to examine the roles the materials played in the introduction, elaboration, and assessment of content and/or language. Data collection occurred in the form of field notes during classroom observations, audio-recordings of the classroom discourse, formal interviews with the teacher before and after the academic unit as well as informal conversations between the teacher and researcher throughout the unit, and the collection of the materials used in class, including handouts and PowerPoints.

Because the research question contains four distinct sub-questions, I designed an observation protocol to help focus my field notes (Appendix C). This protocol was intended to support my field notes as I simultaneously made note of content instruction, language instruction, content and language integration, and language use. I quickly found, however, that I was missing valuable information by taking notes by hand, and I set aside the protocol on the third day in order to take notes on a computer.

Along with the observation protocol and field notes, audio-recordings of classroom discourse were collected in an effort to use triangulation to test for consistencies among data during analysis (Patton, 2015). Audio-recordings were captured with two high-quality digital recording devices. One device was placed at the front of the room in order to capture the teacher's instructional discourse. This device also picked up student discourse during whole class activities. A second device was placed in the same location each day, on an empty table in the back center of the circle created by the students' tables. This device was able to capture the language of many of the students during small-group or individual work time.

Formal interviews with the teacher were conducted before and after the completion of the observations to better understand the meaning the teacher made from the materials that he employed (Seidman, 1998). The semi-structured interviews were conducted with an informal interview guide (Patton, 2015) (Appendix D) to ensure that specific, relevant topics were covered while allowing for a conversational style; at the same time, a conversational strategy was used throughout to allow for flexibility in the ensuing interaction (Patton, 2015). The questions for the second interview were developed during data collection and initial data analysis phases and provided an opportunity for John to engage with the initial themes and patterns that I was identifying. Informal conversations with John occurred before class each day and functioned as a form of member-checking to help me better understand what I was observing and ensure accuracy in my observation notes. (Maxwell, 2012).

Finally, as this study focused on materials as the phenomenon of interest, copies of any materials used during the observed classes were collected whenever possible. These materials included all documents, such as handouts, quizzes, readings, and PowerPoint slides, used throughout the lessons. John also incorporated three short videos, but these were not collected as they required educator access to play.

Data Analysis

The data analysis was conducted inductively with the goal of discovering patterns, themes and categories in the data (Patton, 2015). The first step of data analysis occurred as I listened to the classroom audio-recordings in order to add detail to my field notes. John's students worked individually or in small groups for many activities, making it necessary to compare the audio captured on the two devices in order to record as much detail and discourse as possible. While listening to the audio and expanding my field notes, I identified several emergent themes, which became initial categories for the first round of coding.

During this listening phrase, I transcribed classroom discourse in whole class and small group activities when it related to the use of materials. Determining what to transcribe was a challenging process, particularly because it was often difficult to understand the audio-recordings with multiple students loudly talking at the same time. I consistently transcribed whole class interactions that were related to or elicited by the materials. During individual and small group activities, I focused my transcription on interactions for which I could discern at least two consecutive turns. Other patterns in the student discourse, such as common phrases used by multiple students when working with

a specific material, were noted in the field notes. Although I had initially intended to conduct a detailed, quantitative analysis regarding the manner in which turns-at-talk (Schegloff, 2007) were elicited by the materials, this proved impossible due to the difficulty of discerning all of the audio data.

After completing the process of reviewing all of the audio data in tandem with my observation field notes, I conducted the first round of descriptive coding, carefully reading the field notes with embedded transcripts for the basic topics. Saldaña (2009) quotes Tesch (1990) in reminding that descriptive codes are "identifications of the topic, not abbreviations of the content" (p. 119). These first-round codes were short phrases that summarized the basic topics and could easily be organized into analysis memos. I then used second-cycle coding methods (Saldaña, 2009) to reorganize codes and to "develop a sense of categorical, thematic, conceptual and/or theoretical organization" from the first codes (p. 149). I used the analysis memos to combine codes into a smaller set of constructs and to identify broader ecological themes as I made connections between the topics and the relationships among the materials and participants. The ecological framework guided my data analysis because I approached my coding cycles with the perspective of the classroom as a "complex, interlocking set of elements and relationships in which any one element can only be understood in light of its interactions with other elements" (Guerrettaz & Johnston, 2013, p.783). During the coding processes, I was particularly aware of how various codes might interrelate as representations of the dynamic relationships within the classroom. The interviews were used primarily to support or challenge the emergent conclusions as I identified them through the analysis

process. I listened to the interviews various times over the course of the analysis, taking notes on key themes and transcribing sections in which a direct discussion of the materials occurred.

Experiences, Identity and Biases of the Researcher

Because I am currently completing the University of Minnesota's Dual Language and Immersion certificate program in tandem with my graduate studies, I entered John's classroom with strong beliefs about best practices in immersion pedagogy. However, because I have not personally taught in a secondary immersion continuation program, I also joined the space as an eager researcher, genuinely interested in watching immersion pedagogy in action. These two viewpoints were valuable to my research because they caused me to be simultaneously open-minded and critical of the classroom that I was observing.

I entered this project with several biases of which I needed to remain cognizant throughout the data collection and data analysis processes. The summer of 2016, I conducted a series of interviews with secondary immersion teachers, asking them about their experiences with materials in their programs. While I drew on these interviews in developing and conducting my interviews with John, I needed to be careful not to conflate his experiences and stories with those of other immersion teachers. I have also spoken and worked with several Spanish immersion teachers in the metropolitan area in which the research took place. Once again, as I conducted the analyses, I was careful to set aside assumptions I brought in from their experiences in order to draw my conclusions directly from the data at hand.

Finally, many of my graduate courses have focused on pedagogical aspects of the immersion classroom and the effects of pedagogical choices on students' language development. This is a strong interest of mine, but is not necessarily related to the materials as they are centered in this study. During the analysis, I frequently checked myself to ensure that I was remaining focused on the materials and their reality rather than analyzing John's instructional decisions or other classroom dynamics that were not related to the materials.

Chapter 4: Findings

In this chapter, I present the findings of the data analysis. The analysis revealed that the materials played various roles that were crucial to the classroom ecology. The affordances of the materials seemed to go beyond those intended by the creator or even those consciously planned by the teacher. These roles and affordances will be addressed in the context of the research sub-questions, but, due to their overlapping and interacting nature, they do not neatly fit under each sub-question in isolation. Thus, some overlapping relationships, such as the interlocking connections among materials, curriculum and student discourse, will be elaborated throughout multiple sections. This overlap is expected since an ecological approach views the classroom as an ecosystem in which "a large number of influences are present in a partially chaotic, that is, unpredictable and uncontrolled way, and somehow among all the movement and interaction a social system, a complex order emerges" (van Lier, 2004, p. 8). As will be demonstrated in the findings, in this classroom the materials greatly impacted the creation of this "complex order" as the roles of the materials in content instruction had implications for their roles and affordances in language instruction and student discourse. Each of the results sections below explores how the materials were actually used in the classroom in an attempt to tease apart the "complex, adaptive system" (van Lier, 1997) at work in this classroom ecology.

Before further elaborating on the findings, I will provide context regarding the types of materials that were used throughout the unit and the typical sequence of a daily lesson. As mentioned previously, the topic of the unit that encompassed data collection

was “Africa”. The most salient material used in the unit was the textbook, a Spanish translation of *My World Geography* (*My world geography*, 2011) published by Pearson Education. To accompany the textbook and address the district’s goal of improving reading comprehension (Interview #2, 12/13/2016), John utilized and adapted reading comprehension questions from ancillary materials also published in Spanish by Pearson. John also created many of his own reading comprehension questions when he found the publisher questions lacking. These questions were provided to the students in 5/6-page packets that were organized by textbook chapter.

For every lesson, John created a PowerPoint presentation that was always displayed on the Smartboard at the front of the classroom. John explained his use of the PowerPoints as a “presentational guide” that provided more visuals and helped him pace the daily lesson (Interview #2, 12/13/2016). The presentations always included introductory slides with the unit title (Africa), a reminder of the class rules, and a daily agenda before transitioning into specific slides for the lesson. John also used the presentations as a resource for introducing and analyzing geographic and demographic maps, which were used as the central materials for the first activity of the unit.

Handouts were used in every lesson as a focusing point for the activities. Many lessons centered on the reading comprehension packets mentioned previously, but John provided other handouts for individual activities outside of the textbook. One of these handouts came directly from the ancillary materials provided in tandem with the textbook, and John created or adapted others to meet his goals and the needs of the students. All of the handouts invited students to write through explicit instructions or the

inclusion of questions followed by blank spaces. Students took notes and wrote exclusively on handouts, never making use of separate notebooks.

John showed four short informational videos during the unit. The first was a YouTube video of a native Spanish speaker introducing the basic geography of Africa. This video was not accompanied by a handout or follow-up activity. The second and fourth video were both 20-30 minutes long with information presented in English, and students were expected to answer comprehension questions in Spanish while watching. The third video was only a few minutes long and showed images of Africa without any oral text.

The classroom itself was relatively large, with lab surfaces with a sink along one wall and an island of tall lab table at the front of the room which John used for his supplies. John taught on a cart, meaning he moved among several different classrooms throughout the day carrying his materials on a large, rolling cart. The room was also equipped with a Smartboard at the front, behind the island, which John used daily as a focusing point for activities. The students sat two to a table at large lab tables that were arranged in a horseshoe facing the front of the room. In the middle of the horseshoe were three more lab tables arranged front to back in a row, and students sat at the first two of these tables. John gave students assigned seats, and he did change the seating chart half way through the unit. The social studies textbooks that were frequently used throughout the unit were kept in a cupboard near a back corner of the room. This meant that activities using the textbook were punctuated with a noticeable pause and movement as students had to first procure the books before the activity could begin. Students did not take the

textbooks from the classroom, but Trout Creek Middle School was a 1:1 technology school at the time of the study, and all students had Chromebooks so John could upload unfinished readings to the class webpage for students to complete at home. Notably, the Chromebooks were rarely used in class and did not appear to assert an important function in the classroom ecology.

At the time of the study, Trout Creek Middle School followed a block schedule. Each lesson was 85 minutes long, with a five-minute break in the middle. These longer blocks allowed John to plan three or four unique activities per lesson. Although every lesson was different, there was a general pattern of how activities were sequenced. John began each lesson at the Smartboard, quickly running through the first few slides of the presentation. After showing the agenda, he would guide the students through an *enfoque inicial* [initial focus] activity that was frequently a review of previous information and twice a short, discussion-based activity. After the *enfoque inicial*, John would direct the students toward the first activity of the lesson, which was either individually working with the textbook or a whole class guided activity. If students were initially reading independently, John would allow them to work in groups after the first 15-20 minutes. The aforementioned break occurred in the middle of the lesson, and John usually switched to a new activity after the break. The two English videos were both shown as the last twenty minutes of the lesson.

The following sections of this chapter will present the results of data analysis organized by the research questions. I will first describe the roles of the materials in content instruction, followed by the roles of the materials in language instruction. The

third section explores how materials impacted language use. The fourth section briefly describes ways that materials might have impacted content and language integration as there were no discernable patterns in the data.

What Roles do Materials Play in Content Instruction?

It should not come as a surprise that the materials played an important role in content instruction throughout this unit. A variety of different materials were employed for different purposes over the course of the observations. During the analysis process, I perceived that they could be organized into an informal hierarchy representing how they were positioned in terms of importance for content instruction. Materials located at the top of the hierarchy seemed to carry the most weight in terms of content instruction, whereas materials lower on the hierarchy seemed to play a less important role. This hierarchy, as illustrated in Figure 4.1, was determined by analysis of classroom observations, classroom discourse, homework assignments and the final exam, and the most salient materials will be further elaborated throughout this section.

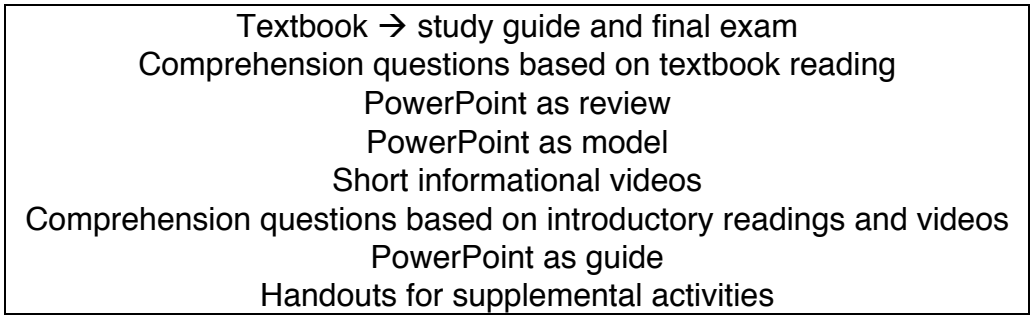


Figure 4.1. Hierarchy of Materials in terms of Importance to Content Instruction

Textbook as curriculum. Although John incorporated a variety of materials as sources of content throughout the unit, classroom observations clearly pointed to the textbook as the *de facto* curriculum. Nunan (1989) describes two perspectives of

curriculum, distinguishing between the curriculum as a "statement of intent" of what should be taught as outlined in the syllabus or objectives and curriculum as reality, that is, "what actually goes on from moment to moment" in the classroom (p. 9). Often the relationship between the two notions of curriculum is "messy" (Tudor, 2003, p. 6) as the reality of classroom teaching is not as neat as the official curriculum. It is precisely in this nexus of messiness between the intended curriculum and the curriculum as reality that materials offer important affordances. In this classroom, the textbook played a significant role in the curriculum as reality, even though John did not explicitly state in interviews an intent to base the content instruction on the textbook. As will be addressed throughout these results, the textbook's weight as the *de facto* curriculum had implications in other aspects of the classroom ecology beyond content instruction.

The notion of textbook as curriculum has previously been noted in a variety of education contexts (see Guerrettaz & Johnston, 2013); however, it is particularly important in the immersion classroom because textbooks used in immersion programs are often translations and not designed with the unique instructional context of immersion in mind. Of the approximately 14.2 hours of class time observed during the unit, about 8.5 hours, or nearly 60%, were centered around the textbook. Although this percentage does illustrate that other materials, such as the ever-present PowerPoint presentation, were used for approximately 40% of the in-class activities, the activities based around the textbook carried more weight through their positioning through classroom discourse and the formative and summative assessments. The textbook was approached in a linear manner, with students working through Chapters 13, 14, and 15 in order over the course

of the unit. Guided and independent reading were often paired with comprehension questions, which were also reviewed in class. Apart from a week-long independent geography project centered around Google slides, the only homework given throughout the unit was the completion of text-based reading comprehension questions that were not finished in class, further reinforcing the text and the associated comprehension questions as the main curriculum.

The formative and summative assessments chosen by a teacher inherently function to position some academic materials or learning objectives as more important than others and can be analyzed as a representation of the covert, if not overt, curriculum. Wiggins and McTighe (2005) argue that assessments should collect evidence that documents and evaluates whether the desired learning has been achieved, essentially linking the assessment to the learning objectives of the curriculum. In this class, the final exam held considerable weight, both academically and psychologically, and students were quick to ask if information would be on the exam when presented with a new handout. John at times reinforced the dichotomy between important (on the exam) and supplementary activities. He responded to students' queries about a given activity and the exam with, "*Ésta es una actividad para usar el cerebro*" [This is an activity to use your brain] (Field Notes, 12/5/16, 12/7/16), for those activities that would not translate to the exam. It is important to note that this phrase was used in conjunction with two of the three handouts that were not related to the textbook, essentially relegating them to a subordinate status in comparison to other handouts that were linked to the text or were directly from supplemental materials designed to accompany the text.

Returning to the concept of assessment as indicator of curriculum, John employed four main assessments throughout the unit, three of which assessed knowledge of information from the textbook. The first was the previously mentioned Google slide presentation which John had designed himself as a way for students to become more familiar with the geography of Africa. To complete this project, students were given a handout with three paragraphs describing a "flight over Africa" and the geography one would see. The bottom portion of the handout directed students to create a presentation that visually demonstrated the information in the paragraphs. It also included a list of the topic for each slide and the direction that each slide should have a map and two images. No writing was required. This project was given approximately 45 minutes of class time and was otherwise completed outside of class. Next, John used two open-note quizzes in class that related directly to Chapters 13 and 14 and were based on the associated reading comprehension questions. Finally, although the final exam included some geographic information that had been presented outside of the textbook, much of the exam assessed knowledge of key terms and concepts from the text. The importance of the textbook to the final exam was further underscored by the organization of the exam study guide, which was divided into sections based on the three chapters of the unit.

The phenomenon of *textbook as curriculum* appeared to assert the function of a *structure* in the class. As a reminder, in this study, the term *structure* refers to the impersonal, organizational forces in the classroom that reflect ideologies, norms and policies at play. Van Lier (2004) draws on Capra (1996) as he describes a cycle through

which *structures, processes,* and *patterns*[3] affect one another. Relevant to this analysis, van Lier (2004) states that "structures then provide constraints (positive and negative) that channel, guide, and delimit the processes" (p. 197). The *structure* of *textbook as curriculum* had several ecological consequences in this classroom. First and foremost, social studies content instruction held considerable precedence over language instruction, a common but concerning phenomenon in the secondary immersion classroom, given the need for students' language proficiency to continue progressing in order for them to access higher level content (Schleppegrell, 2004). This imbalance between content and language was reinforced by the nature of the textbook, which was designed to present and foster engagement with social studies concepts. Although the textbook does highlight key academic terms, it does not draw attention to linguistic features of the language of social studies. Because the textbook is positioned as the main curriculum of the unit, its lack of language focus may have constrained opportunities for language instruction to occur.

Second, the nature of the comprehension questions that were used in conjunction with the textbook created an "answer-focused education paradigm" (Zwiers et al., 2014, p. 11). As will be shown below, this paradigm becomes an even more impactful *structure* that permeates throughout numerous *processes* in the class. Most of the questions and activities presented in the reading comprehension packets were "display" questions (Lyster, 2007) designed for students to demonstrate what they have learned rather than to

[3] Capra (1996) writes about biological ecosystems and defines *pattern* as "the configuration of relationships among the system's components that determines the system's essential characteristics" (p. 158). Capra distinguishes between *pattern* and *structure*, which he defines as the "physical embodiment of [a] pattern of organization (p. 158). Because *structure* is defined differently in this paper, Capra's (1996) notion of *pattern* and *structure* is not taken up further.

put forth an argument or idea for a purpose. Examples of display questions used in the reading comprehension packets are shown in Figure 4.2. The use of display questions communicates to students that their task is to find and present a short, correct response (c.f. Boyd & Rubin, 2006) and, in this class, seemed to limit opportunities for them to practice higher levels of academic thinking and language production.

(1) ¿Cuál de las lenguas africanas es básicamente bantú con elementos árabes?
[Which African language is mostly bantu with Arabic elements?]

(2) ¿Cómo se llama a la gente nativa de una region?
[What are the native people of a region called?]

(3) ¿Cómo se le llama al intento deliberado de exterminar a una población entera?
[What is the term for the deliberate intent to destroy an entire population?]

Figure 4.2. Examples of Display Questions from Publisher-Created Textbook-Based Reading Comprehension Activities. Chapter 14. Day 7

Some comprehension questions were written to elicit slightly longer responses with higher levels of critical thinking. These were sometimes open referential questions, questions to which teachers do not know the answers (Long & Sato, 1983), and sometimes closed referential questions, those for which there may be more than one answer but the teacher might still evaluate the acceptability of the response. An example from the same packet as the questions shown in Figure 4.2 is *"¿Crees que la falta de recursos en algunos países puede ser causa de conflictos? ¿Cómo puede causar conflictos en otros países la abundancia de recursos?"* [Do you think that a lack of resources in some countries can cause conflicts? How might the abundance of resources cause conflicts in other countries?] These questions appeared at the bottom of a page and

were followed by three blank lines that served as an invitation for the written answers. Despite the open-ended nature of the questions, the spacing on the page limited the amount that students could write, reinforcing the notion that student responses should be short.

This answer-focused paradigm was further underscored by the PowerPoint slides, which displayed a possible answer to this and other critical thinking questions during a whole class review of the comprehension packet. The slides were intended to model one of many possible responses, a fact that John repeated multiple times while the slide was projected. However, the one-correct-answer-focused paradigm in the classroom appeared to undermine his efforts, as students' main concern became copying the response from the slide (Field Notes, 12/6/16, 12/8/16).

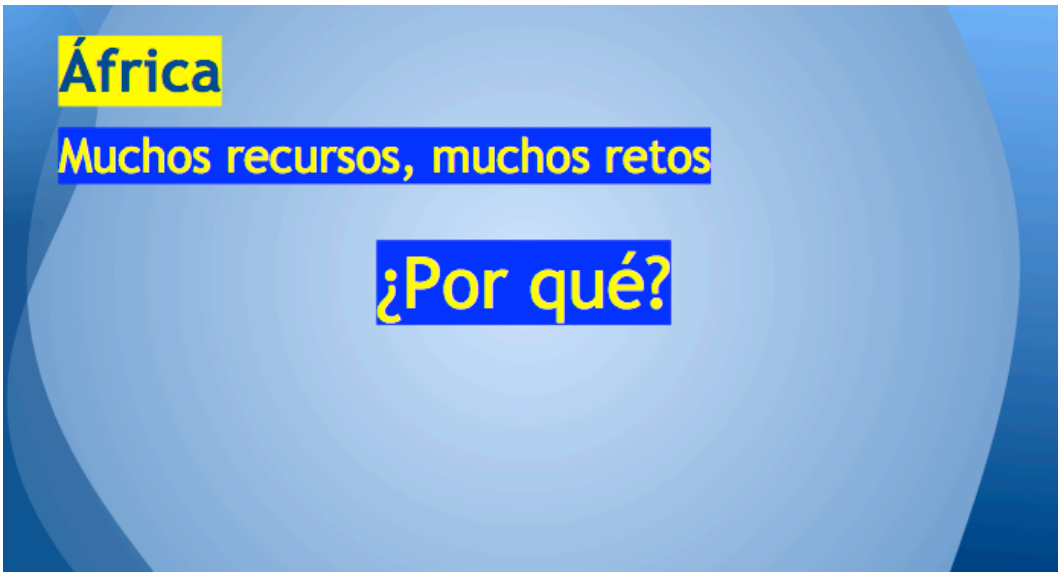
Finally, the nature of the final exam itself strongly reinforced the one-correct-answer paradigm. As noted above, the exam held considerable weight in the classroom, and student discourse indexed a desire to perform well on the exam. The test was designed with seven sections, five of which – true/false, CLOZE activity with word bank, multiple choice, map labeling with word bank, and map matching – explicitly required students to demonstrate knowledge of the one correct answer. The fourth section, short answers, presented students with four display questions and instructions that they should "answer the questions using **complete sentences**" [emphasis in original]. Each of these four questions were taken directly from the comprehension packets and study guide, and "a possible correct response" for each had been shared in class. The fifth section of the exam was positioned as a short essay, and students were instructed to choose one of three

semi-referential questions and respond with at least four complete sentences and "valid information to support [their] point of view." The ambiguous term "valid information" makes it unclear whether John expected students' responses to these questions to be fact-based or simply on topic. Although the fifth section of the exam might have been a space for students to demonstrate critical thinking and analysis, the rest of the test maintained the fact-based one-correct-answer paradigm.

In short, the large number of display reading comprehension questions in tandem with the textbook as the central curriculum and the considerable weight of the final exam seemed to offer affordances for the emergence of a fact-based, rather than theme or concept-based, instructional paradigm. The term emergence is used purposefully to describe this paradigm as it truly is a "reorganization of simple elements into a more complex system" (van Lier, 2004, p. 81). The foundational elements of the paradigm – the textbook, reading comprehension questions, specific PowerPoint slides, and their uses – did not individually impact the classroom ecosystem in the same way as the higher-level system created by their interlocking relationships.

PowerPoint as affordance for paradigm shift. In contrast to the overarching fact-based paradigm, John did use the PowerPoint and teacher-made handouts several times throughout the unit to pose "authentic" questions that pushed students to synthesize and apply their knowledge. An example of this occurred on Day 6, when John began the lesson by presenting on the PowerPoint several demographic maps that had been

introduced on Day 1 before posing the essential question[4] of the chapter. Extract 1 demonstrates the subsequent interaction between John and the students, and Figure 4.3 illustrates the PowerPoint slide that was displayed during Turns 8-32. Note that due to the difficult nature of numerous overlapping voices in the classroom discourse, it was impossible to keep track of individual student voices across interactions when transcribing. Therefore, in the extracts throughout this paper students are numbered to indicate multiple voices within the given interaction, but the numbers do not represent the same student across extracts.



[Africa. Many resources, many challenges. Why?]

Figure 4.3. PowerPoint Slide Displaying a Referential Question. Slide #12, Day 6

[4] The textbook posed essential questions for each chapter, which John modified and incorporated into several of the lessons with varying degrees of depth and analysis. Essential questions are provocative questions that "foster inquiry, understanding, and transfer of learning" (Wiggins & McTighe, 2005). John incorporated these questions as prompts for a short answer section on the final exam.

Extract 1. Whole class discussion prompted by the essential question on the PowerPoint slide. Day 6.

1.	John:	*Mucho recursos tiene pero otra gráfico, otro mapa, hay mucha desnutrición* ((taps board)), *esperanza de vida no muy alta* ((taps board)), *gobiernos que controlan las libertades de la gente entonces controlan la gente* ((taps board)), *uh, mucha corrupción* ((taps board)). *Mi pregunta entonces es por qué? Muchos recursos tiene, pero a pesar de todos los recursos, todavía hay esperanza de vida que no es muy alta, mucha corrupción, nivel de vida no muy alta, cómo se lo puede explicar?Tú eres una chica fantásticamente inteligente, entonces, cómo....*	It has a lot of resources but another image, another map, there is a lot of malnutrition ((taps board)), life expectancy not very high ((taps board)), governments that control people's freedom so they can control the people ((taps board)), uh, a lot of corruption ((taps board)). My question, then, is why? The continent has many resources, but in spite of all the resources, there is still a low life expectancy, a lot of corruption, a low level of life, how can you explain it? You are a fantastically intelligent girl, so, how…?
2.	FS1:	((pauses)) ((Other students comment about her ability to answer))	((pauses)) ((Other students comment about her ability to answer))
3.	John:	*Bueno, usando tu cerebro, no hay una pregunta, una respuesta correcta ni incorrecta*	Well, using your brain, there isn't a question, a correct or incorrect response
4.	FS1:	Wait, *para*	Wait, for
5.	John:	*África tiene muchos recursos pero hay muchos problemas, muchos retos que tiene que superar, pero por qué por qué hay estos problemas?*	Africa has a lot of resources but there are a lot of problems, a lot of challenges that it has to overcome, but why why are there these problems?
6.	FS2:	*Um, porque porque personas no son inteligentes*	Um, because because people are not intelligent
7.	John:	*No, pienso que no importa cualquier parte del mundo, pero es una adivinanza, pero hay personas*	No, I think that it doesn't matter what part of the world, but it is a guess, but there are intelligent

		inteligentes por todos lados, posiblemente menos educados pero eso no indica no inteligente. ¿Qué piensas tú Jonah? ((pause)) *Por favor, señorita Kate, ayúdanos.*	people everywhere, maybe they are less educated, but this does not indicate intelligence. What do you think, Jonah? ((pause)) Miss Kate, please help us out.
8.	FS3:	*Um pienso porque um tal vez porque no tienen los recursos*	Um I think because um possibly because they don't have resources
9.	John:	*Okay, pero tiene muchos recursos pero a veces los recursos-*	Okay, but it has a lot of resources but sometimes the resources-
10.	FS4:	*El gobierno toma los recursos*	The government takes the resources
11.	John:	*Posiblemente mal uso de los recursos, abuso de poder, menos oportunidades presentadas como nosotros tenemos o en otros lugares*	Possibly bad use of resources, abuses of power, fewer available opportunities like what we have or in other locations
12.	FS5:	*Muchas personas son pobres*	Many people are poor
13.	John:	*Sí, pero esto es más un resultado que una causa, pero -*	Yes, but this is more of a result than a cause, but –
14.	FS5:	*Pero no puede como*	But [they] can't like
15.	John:	*- pero parte del ciclo, tú tienes razón, sí, es continua, sí, entonces hay que como saltar de este ciclo. ¿Sí?*	-but part of the cycle, you are right, yes it's continual so [they] have to like break this cycle. Yes?
16.	MS1:	*Uh, uh, las, uh el, uh gobierno no como dan ((*incomprehensible*))*	Uh, uh, las, uh the uh government doesn't give ((incomprehensible))
17.	John:	*Sí, porque hay líderes, pero no son buenos líderes. ¿Sí?*	Yes, because there are leaders, but they are not good leaders. Yes?
18.	MS2:	*Hay mucha población.*	*There is a lot of population.*
19.	John:	*Y cuando hay más población, y hay muchos problemas, aumenta, sí,*	And when there is more population, and there are a lot of

multiplica los problemas. Bien. ((Taps board, signaling end of discussion))	problems, it increases, yes, multiplies the problems. Good. ((Taps board, signaling end of discussion))

At the beginning of the excerpt, John cycles through five demographic maps that were not included in the textbook, briefly reminding students of the conclusions they had drawn from these maps on Day 1. The maps visually represent social and political challenges in Africa, such as high malnutrition, low life expectancy, and corruption, and are meant to serve as the foundation for the ensuing discussion about why Africa has many challenges even though the continent is rich with resources. This is one of three instances over the course of the unit when a whole class discussion based on a referential question occurred. In this case, the question was posed as a closed referential question as John did have expectations of appropriate responses. In contrast to the usual fact-based paradigm of the class, John encourages students to make guesses in their attempts to apply their new knowledge to this question. In fact, in Turn 3, he directly acknowledges that there is not one correct response as he encourages the first student to answer.

The referential nature of this question naturally, albeit temporarily, shifted the pedagogical paradigm of the class toward a more dialogic space. Mercer and Littleton (2007) argue that "for a teacher to teach and a student to learn, they must use talk and joint activity to create and negotiate a shared communicative space" (p. 21). In Extract 1, the PowerPoint provided the affordance for John and the students to interact more freely, possibly because they were physically separated from the textbook and its one-correct-answer focus. We see in the interaction that students were willing to test out answers

based on materials that have been discussed in class, referencing concepts from the maps like population and resources. Presenting semi-referential questions through the PowerPoint seemed to provide more affordances for John to work with students in their Zone of Proximal Development ZPD), "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Working in the ZPD requires co-authorship or co-construction (Swain, Steinman & Kinnear, 2015), and opportunities for co-construction can more regularly occur when students produce longer and more creative discourse. That said, John's follow-up moves in Turns 7, 9, 11 and 13 in reaction to student responses appear to show that although the use of material opened up an affordance for student creativity and higher level thinking, John still had expectations for the possible correct answers. The implications of John's follow-up moves for student discourse and language development will be further elaborated in the discussion.

Dalton-Puffer (2006) argued against oversimplifying classroom language as "being divided between 'natural, authentic and open-ended' referential questions on the one hand, and 'unnatural, artificial and closed' display questions on the other" (p. 205). Furthermore, research in immersion and other content-based contexts has shown both display and referential questions to be effective at eliciting extensive student responses (Haneda, 2005; Musumeci, 1996). That said, in the case of John's classroom, the data provide strong evidence that the overuse of display questions created an instructional

paradigm focused on short, correct, content-focused answers. In this classroom, it is only in moments when materials pose open-ended questions that the idea that there could be more than one correct response surfaces. How this paradigm impacted student discourse is further described later in this chapter.

In terms of the classroom ecology, the PowerPoint as utilized in this activity provides an opportunity for John to be more creative in his pedagogy, building upon information from the textbook in a dialogic style. It is important to note, however, that despite John's efforts to work outside of the textbook, several impeding factors maintain the status of this activity, *or process*, as a peripheral aspect of the curriculum and content instruction. First, the entire discussion, including John's introduction, was only about five minutes long. Second, this discussion was the first activity of the lesson, occurring even before the *enfoque inicial* bell ringer activity that was part of the daily routine. Finally, because handouts and written answers were a strong focus of this class, the lack of additional handout or requirement to take notes may have suggested to the students that this material was not necessary to remember for future use.

Rather than attempt to determine whether these constraining factors are caused by the *textbook as curriculum* and one-correct-answer-paradigm *structures* or if they are further examples of the *processes* through which the structures came to exist, this analysis shows that there is a cyclical, non-linear relationship between the *processes* and *structures* related to the materials and content instruction. The materials and how they are used simultaneously serve as catalysts for the creation of some *structures* of the

classroom while also creating opportunities for affordances that momentarily step outside of those *structures*.

What Roles do Materials Play in Language Instruction?

As noted in the literature review, immersion teachers have been found to describe and identify themselves as "always teaching language" (Fortune et al., 2008, p. 77). Despite this self-assessment, considerable research has shown that many immersion teachers maintain a distinction between function and form, positioning content knowledge as the top instructional priority with language instruction occurring incidentally or not at all (e.g., Fortune et al., 2008; Netten, 1991; Salomone, 1992; Swain & Carroll, 1987). John's stated personal belief about language instruction in the immersion classroom fits into this model. He shared that the immersion teachers at Trout Creek Middle School avoided explicit grammar instruction by design. According to John, they believed that the students are not developmentally ready to understand metalinguistic instruction until eighth grade, at which point they take a stand alone advanced Spanish class (Interview #2, 12/13/2016). Lyster (2007) argues that such an incidental approach to language instruction is insufficient for immersion students to develop the full range of grammatical systems and pragmatic language in the target language. He proposes that immersion teachers should incorporate a more systematic and integrated "counterbalanced approach" to language instruction in their classrooms. While teachers' pedagogical decisions clearly have a strong effect on how language is approached in the immersion classroom, the following analysis shows that the materials

themselves can create affordances and constraints that also impact how language instruction is taken up.

Materials as a source of unknown vocabulary. In terms of language instruction, the first and most straightforward role of materials in this classroom was as a source of vocabulary instruction. In fact, language instruction in this classroom was limited almost entirely to vocabulary instruction in which new or unfamiliar words were taken up by the teacher or students. In this way, John's immersion classroom is quite typical, as previous research has shown that it is common for Spanish immersion teachers to focus their language instruction on vocabulary and verb tenses, particularly as they push their students toward more lexically accurate uses of the target language (Fortune et al., 2008).

According to Beck, McKeown and Kucan (2002), words can be categorized into three tiers. Tier One words are basic words, such as study, rain, and sister, that rarely require instructional attention in school (for students learning through their home language). Tier Two words are of high frequency and appear in a variety of domains. Examples include development, achieve, and gratuitous. Finally, Tier Three words are often limited to specific domains and appear with a lower frequency, such as demographic, mesa, or ethnocentrism. Immersion students often have a restricted vocabulary limited to basic, high frequency words or content-specific words (Harley, 1992), what Beck et al. would categorize as Tier One and Tier Three words. Researchers have argued that mainstream classroom teachers need to focus vocabulary instruction on Tier Two, or high frequency, cross-contextual, words in order to develop their students' lexical repertoire so that they can communicate more precisely and accurately (Beck et

al., 2002; Graves et al., 2013). Given the evidence of limited vocabulary found by Harley (1992) and Fortune and Tedick (2015), the same recommendation applies to immersion students.

In this classroom, the textbook, handouts, and select PowerPoint slides introduced many Tier Two and Tier Three words that were unfamiliar to the students. Frequently, these words were presented without any scaffolds such as visuals, synonyms, or elaborated definitions, which can give the reader clues as to the meaning of new words in context. This was particularly the case for the reading comprehension handouts, in which content-specific, Tier Three vocabulary was introduced in isolated reading comprehension questions, such as those shown in Figure 4.4.

(1) ¿Cómo cambia un río en su delta?
[How does a river change at its delta?]

(2) ¿Cuáles son algunos de los efectos de la urbanización en las ciudades?
[What are some effects of urbanization on cities?]

(3) ¿Por qué los nómadas del desierto del Sahara se ganan la vida con el pastoreo de animales en vez de la agricultura?
[Why do the Saharan nomads earn their living as shepherds instead of through agriculture?]

Figure 4.4. Teacher-Made Questions from the Chapter 15 Reading Comprehension Packet. Day 7

The words delta, urbanization and nomads (Tier Three words) are not lexical items that middle school students would frequently encounter. Moreover, in the structure of these questions, the students receive no additional support to guide their understanding. Each of these words was bolded as a key term in the textbook and included in the glossary, but students approached the reading comprehension tasks by

first reading the questions and then searching for the answers in the text. An effect of this "hunt and seek" process was that the Tier Three words seemed to cause them confusion and frustration, as shown in the following extract.

Extract 2. Field notes regarding student response to reading comprehension tasks.

> I can hear another student working on question #4, page 3. She reads the definition of nomads out loud to her partner as the beginning of an explanation to answering the question. A different student can be heard saying "where is this?" as she looks through the text with a sigh of frustration. Another student asks about *urbanización* – another highlighted word in the text. A student can be heard saying, *"Yo no puede encontrar porque encontré cosas pero no encontré exacto*. [I [he] cannot find because I found things but I didn't find exact.]" (Field Notes, 12/6/2016)

Without context, Tier Three words are difficult to comprehend. The reading comprehension questions shown in Figure 4.4 seem designed to encourage students to apply their understanding of the information, as the answers are not directly stated word for word in the text. Despite this intention, the students' method of mainly reading the text around the specific key words does not provide them enough context to be able to answer the question.

It is interesting to note that the vocabulary instruction targeted different types of words depending on the style of activity in which the materials were used. During whole class reading, when the teacher or students read a text aloud round-robin-style by paragraphs, the language instruction was teacher-defined, meaning John identified which words were likely to not be understood. Figure 4.5 shows the first paragraph of a publisher-created activity that was used as a supplemental activity, linking the study of ancient Egypt to geometry. As shown in Extract 3, John would stop the reading to briefly explain a challenging word.

*Para una sociedad anterior a la industria, la construcción de las pirámides de Egipto fue una **proeza** gigantesca de construcción e ingeniería. Aun actualmente, los arqueólogos no están absolutamente seguros de cómo los antiguos egipcios **lograron** esta obra de ingeniería.*

[For a pre-industrial society, the construction of the Egyptian pyramids was great **feat** of construction and engineering. Even today, archeologists are not entirely certain how the ancient Egyptians **achieved** this engineering masterpiece.]

Figure 4.5. First Paragraph of an Activity Handout from the Textbook Publisher (bolding added for emphasis of vocabulary taught in interaction in Extract 3)

Extract 3. Vocabulary instruction during whole class read aloud. Day 8.

1.	John:	*Okay, hay dos palabras allá que posiblemente no han encontrado antes. Proeza. Usando pistas del contexto posible hay una posibilidad que tú sabes que es.* ((reading)) *Una proeza gigantesca de construcción.* ((pause))	Okay, there are two words there that you possibly haven't encountered before. *Proeza*. Using context clues possibly there is a possibility that you know what it is. ((reading)) A great feat of construction. ((pause))
2.	FS?:	Hm?	Hm?
3.	John:	*Hablamos de las pirámides. Fue una proeza gigantesca de construcción. Proeza, una palabra desconocida*	We are talking about the pyramids. It was a great feat of construction. Feat, an unknown word.
4.	FS2:	Process?	Process?
5.	John:	*Suena como proceso pero es parte de proceso pero es más como una obra que vale mucho, sí. Okay y lograron, ¿hemos encontrado esta palabra antes, sí?*	It sounds like process but it is part of process but it is more like a work that is worth a lot, yes. Okay and [they] achieved, we have encountered this word before, yes?
6.	Students:	*No*	No
7.	John:	*Lograr, ¿sí? Bien*.	To achieve, yes? Good.

In this extract, John acknowledges that there are words that may be new to the students (Turn 1). He then isolates the first targeted word, asking students to use context clues to determine its meaning (Turn 1). Encouraging students to use the context to support understanding when approaching new words is a common reading comprehension strategy that assumes that incidental learning can occur through reading (Duquette & Painchaud, 1996, as cited in Belisle, 1997). Beck et al. (2002) describe a continuum of different types of context in which words appear, arguing that some contexts are not conducive to deriving word meanings incidentally. This continuum ranges from misdirective contexts, which direct the reader to the incorrect meaning, to directive contexts that are likely to lead the reader to a specific, correct meaning. The written text shown in Figure 4.5 would be defined as a general context, one in which there is enough information for the students to place the word in a general category, but not enough for them to correctly identify the word's specific meaning. This general context is not unexpected since the purpose of this paragraph is to set the stage for the subsequent activity, not to teach word meanings. This was common in the texts presented in the class, which were designed to provide information, not to promote language instruction. In response to John's prompting, a female student hypothesizes that *proeza* may be a cognate (Turn 4), drawing on English to guess incorrectly that *proeza* means "process". The teacher acknowledges her response, elaborates briefly on a meaning of *proeza* (Turn 5), and then quickly moves on to the next word (Turns 5 and 7).

These interactions occurred commonly during whole class read aloud; however, the most interesting aspect for this analysis is the words that John chooses to draw

students' attention to. During whole class read aloud, John targets Tier Two words, those that represent more precise language and are generalizable to a variety of domains or disciplines. Some examples include *adinerado* [wealthy], *fallecieron* [they died/passed away], and *exuberante* [lush]. As noted previously, this is in line with what vocabulary scholars recommend for determining which words to explicitly teach (Beck et al., 2002; Graves et al., 2013).

Another way of understanding academic vocabulary is through the notion of bricks and mortar (Dutro & Moran, 2003), an architectural metaphor for the two types of words and phrases needed to construct academic language. Brick words are the content-specific vocabulary, similar to Tier Three words in Beck et al.'s (2002) model. Mortar words and phrases are the "basic and general utility vocabulary required for constructing sentences" (Dutro & Moran, 2003, p. 13). Without a productive knowledge of mortar language, students may be able to express content concepts through simple phrases, but they will not be able to create cohesive, complex discourse. Although John draws attention to individual mortar words as they appear in the text, students did not seem to take up the words through repetition or subsequent use. It is possible that the strong content orientation of this class has made students accustomed to only focusing on the brick words that represent key concepts related to the content. This focus could be reinforced by the answer-focused paradigm described earlier, as students do not need mortar words to be successful on the content-based tasks.

To further underscore the students' focus on content-specific vocabulary, it is valuable to examine the words that they chose to highlight for instruction. During

independent and small group reading tasks, vocabulary instruction was student-defined, with individual students asking John for definitions of unknown words. The words targeted by the students were more often content-specific. For example, field notes from the second day of the unit (Extract 4) captured the lexical items that students asked about while completing a reading comprehension packet focusing mainly on geography.

Extract 4. Field notes regarding vocabulary instruction.

> "The language instruction during this segment is nearly entirely vocabulary. Students ask about a number of words in the text, such as *ganado* [cattle], (which the teacher explains and then translates), *abundante* [abundant], *precipitación* [precipitation], *occidental* [western], *desertificación* [desertification] (which is defined in the book). Students do use some vocabulary from the text in their speech, but this appears to be only to answer the content question" (Field notes, 11/29/16).

That students seem to focus more on Tier Three, or content-specific, vocabulary is not surprising when the strong, overall content orientation of the class is taken into consideration. It appears that the students engage with the textbook and handouts as resources for content-specific vocabulary that is necessary to be successful on the final exam. Therefore, for them, the *process* of choosing words for vocabulary instruction seems to relate to the aforementioned *structures* of *textbook as curriculum* and the one-correct-answer-paradigm. It seems that John's interaction with the materials, however, provides a much wider range of affordances for vocabulary instruction.

PowerPoint as support to vocabulary instruction. While materials clearly served the role of introducing unknown and challenging vocabulary, the teacher-made PowerPoint also functioned as a support for that vocabulary instruction. This support appeared in three distinct ways: reviewing key content-specific terms through multiple-

choice questions, presenting definitions of challenging words during whole class reading, and displaying individual words during whole class reading as a guide for John. On class Days 3, 4, 6, and 8, the *enfoque inicial* bell ringer activity was a review of key terms and concepts through multiple choice questions presented on a PowerPoint. Most of these questions were directly centered around a key, content-specific word, although some applied the vocabulary to a more general content question. Figure 4.6 shows examples from Day 3 of the two versions of multiple choice questions.

(1) ¿Qué significa el término "tierra fértil"? *a. es tierra rica en recursos minerales* *b. es tierra cubierta por bosques* *c. es tierra con una variedad de animales* *d. es tierra que se puede cultivar*	(1) What does the term "fertile soil" mean? a. It is land that is rich in mineral resources b. It is land that is covered with forests c. It is land with a variety of animals d. It is land that can be cultivated
(2) ¿En cuál zona de clima se encuentra el Sahel? *a. árido* *b. semi-árido* *c. tropical húmedo y seco* *d. tropical húmedo*	(2) In what climatic zone is the Sahel? a. arid b. semi-arid c. dry and humid tropical d. humid tropical

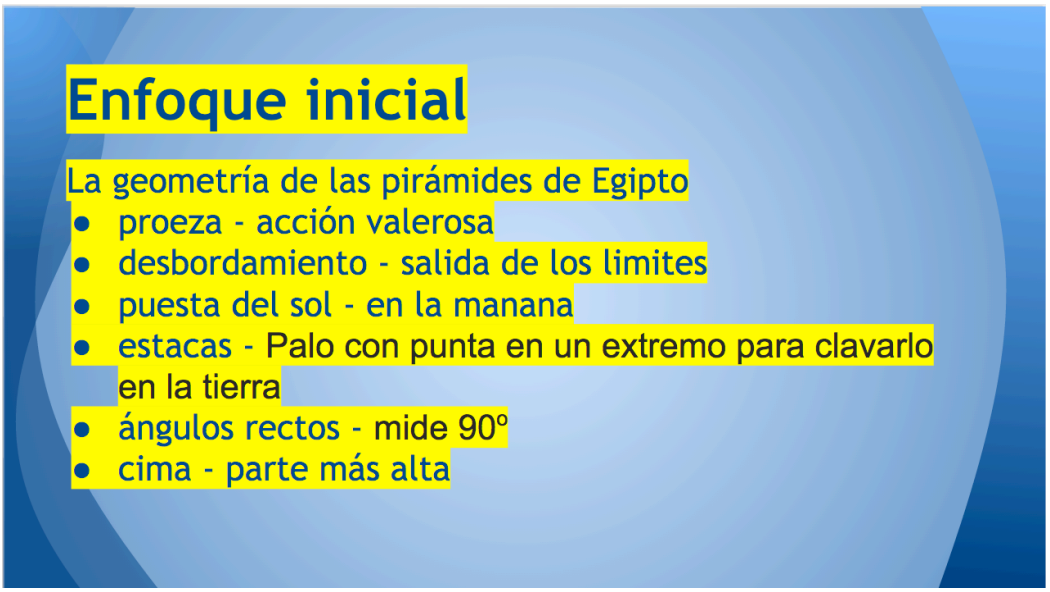
Figure 4.6. Language Instruction through Multiple Choice Review Questions on PowerPoint. Slides 13 & 15. Day 3

As shown in Figure 4.6, questions such as the first directly review the key content term, providing students with an exact definition in a decontextualized manner. Questions such as the second contextualize the key terms, asking students to apply their understanding of the language to a fact-based question. Although the question itself is assessing content through students' understanding of the climatic zones, it is also a

reinforcement of the vocabulary used to describe the zones. This was further emphasized in a brief discussion that occurred on Day 3, when a student asked for the difference between *seco* [dry], a word with which they were familiar from other contexts, and *árido* [arid], a content-specific term (Field Notes, 11/30/2016). These key terms are drawn directly from Chapter 13 of the textbook, and in this context the PowerPoint is serving the role of language instruction support rather than as a presentation or introduction of new language.

The second and third ways in which the PowerPoint supported language instruction occurred during whole class reading activities. On Days 5 and 8, John prepared slides in advance that showed key words from the text. The activity on Day 8 is the same reading activity shown in Extract 3. On slide #25, John had copied the first paragraph of the text, shown above in Figure 4.5, with the two unknown words, *proeza* and *lograron*, underlined. This slide was projected as a student read the paragraph aloud from the handout. After the paragraph and ensuing vocabulary discussion was complete, John displayed the next slide, which contained a list of six words with brief definitions, as shown in Figure 4.7. During the rest of the reading, which was an introduction to an activity relating geometry to ancient Egypt, John did not explicitly refer to this slide or the definitions, although they remained projected on the board. In the second interview, John stated that he likes using PowerPoint presentations because they "help the kids use two of their modalities as least, you know visual and listening to me, so if you are tuning me out, you can at least see what's going on still" (Interview #2, 12/13/16). It seems that in this instance the PowerPoint is positioned as a visual aspect of the language

instruction, with the intent that students will use the definitions to better comprehend the reading.



[Initial focus. The geometry of the Egyptian pyramids. *Proeza* – courageous act; *desbordamiento* – exiting the limits; *puesto del sol* – in the morning; *estacas* – stick with a point on one end to drive it into the ground; *ángulos rectos* – measures 90°; *cima* – highest part]

Figure 4.7. Language Instruction through Definitions on PowerPoint. Slide #26. Day 8. Chapter 15

Finally, during the whole class reading activity on Day 5, the PowerPoint served as a guide for John to remember which words to target. This support occurred over 10 slides, each with 1-2 displayed words organized by paragraph. These words were isolated on the screen, without context or definition. Throughout the course of the reading, John would employ "text talk" (Beck & McKeown, 2001), directly teaching the words through brief explanations and examples in a manner similar to that displayed in Extract 3.

In a more general, ecological sense, the relationships between the classroom *structures* and the materials created affordances for language instruction that were constrained to individual lexical items. Furthermore, during whole class and individual

reading comprehension activities, vocabulary instruction usually focused on the meaning of the word in the specific context of the text rather than examining how a word might be used in a different context or might have different meanings. This narrow focus of vocabulary instruction has been observed in other immersion classrooms in which most planned vocabulary teaching stems from reading activities centered on specific themes (Swain, 1996). As stated earlier, it is possible that the role of the textbook as curriculum is so strong in this classroom that it limits the affordances for conceptualizing language beyond the content and themes of the textbook. If the students and teachers implicitly view language solely as a tool with which to access the content/textbook, it might logically follow that students perceive that new vocabulary need not be associated with other contexts.

Textbook analysis for language affordances. A closer analysis of the language used in the textbook shows that this material did not provide natural opportunities for syntactic or discourse-level language instruction. Table 1 shows the frequency of different types of sentences and verb tenses/aspects used in the first fifteen sentences of two sections of the textbook. The first describes the geography of northern Africa and the second explains the history of Ancient Egypt.

Table 4.1

Syntactic and Tense/Aspect Analysis of Text

	Geography	Ancient Egypt
Sentence type (total instances)		
Simple Sentence	9	11
Appositive	2	1
Relative clause	1	1
Coordinating conjunction	2 (y, pero)	2 (y, o)
Compound complex sentence	1	0
Verb tense (total instances)		
Present tense	16	1
Imperfect tense/aspect	0	4
Preterite tense/aspect	0	13

As demonstrated in Table 1, the language used in the textbook is quite basic. Out of the fifteen sentences analyzed in each section, nine and eleven are simple sentences with only one verb. The remaining sentences do have more variety; however, only four sentences in total had a coordinating conjunction with a second verb, and there was only one complex sentence in the entire thirty sentence sample. When comparing the use of verb tenses/aspects between the two sections, the second passage had more variety, which was expected given the topics. The first passage, which is solely descriptive, utilizes only the present tense. The second passage, which provides historical information, remains in the past tense/aspects nearly exclusively. It is interesting to note, however, that although both the imperfect and preterite tense/aspects are used in the second passage, they never both appear in the same sentence, further underscoring the simplistic nature of the writing. Previous research has shown that the oral input that immersion students receive from their teacher is much less complex than might be expected (Harley et al., 1987; Lyster & Rebuffot, 2002; Swain, 1996), and this analysis demonstrates that the same may

be true in this class in terms of written input – at least insofar as these examples illustrate. It can be logically inferred that because the written input lacks complexity, it does not naturally foster instruction on more complex language structures, nor does it provide examples of discourse-level academic language.

What Roles do Materials Play in Language Use?

This sub-question was initially intended to examine how materials interact with students' use of their bilingual linguistic resources, particularly looking at whether specific materials seemed to lead to more English use than others. During the data collection and analysis process, however, it quickly became clear that students in this class remained in Spanish more than reported in previous research (e.g., Broner, 2000; Fortune, 2001). Although students did use English on occasion, I could not discern any distinguishable patterns as to how English use occurred in relation to the materials. At the same time, early in the analysis process I noticed that the materials did appear to relate to the different language functions that students utilized as well as to the nature of their utterances. I therefore re-conceptualized the term "language use" to refer to the way students used language to perform different academic and communicative functions throughout the unit.

Materials and student language use. Despite the overall social studies content orientation of the class, the language functions utilized by the students were overwhelmingly communicative rather than academic. Language functions are the "tasks or purposes and uses of language" (Dutro & Moran, 2003, p. 7). That is, they are the ways that we use language to accomplish a specific social (communicative) or academic

purpose. Although it is challenging to delineate a comprehensive system by which to clearly categorize all language functions (Flowerdew, 1990), scholars have developed lists of the most common language functions for use in language instruction (e.g., Finocchiaro & Brumfit, 1983). These functions are frequently distinguished as either communicative functions, those that are used for social purposes, and academic functions, which are the tasks that students perform in the process of learning academic content (Chamot & O'Malley, 1994). Table 2 provides some illustrative examples of communicative and academic language functions observed in John's classroom.

Table 4.2

Examples of Communicative and Academic Language Functions

Communicative language functions	Academic language functions
Expressing emotions	Informing – recounting information from the text
Requesting information	Justifying and persuading
Giving and responding to instructions	Solving problems
Clarifying guidelines	Inquiring about the content

In this class, in a wide range of activities associated with the materials, student output relied on communicative functions like clarifying the guidelines of the task, expressing confusion, asking for help, and requesting logistical information. Some activities and materials did elicit more academic functions, such as defining a content term, inferring, comparing, and informing. Interestingly, it appeared that tasks that related directly to the content via the textbook, such as comprehension questions, were more strongly associated with a stunted range of communicative functions, whereas tasks and

activities that were positioned as supplemental elicited a broader range of communicative and academic functions.

Extract 5 represents the type of discourse often produced by students when working with the textbook and related comprehension questions. In this segment, John is leading the class in a round robin reading[5] of the introductory section of Chapter 15 of the textbook. Throughout the guided reading, John asked students to read a paragraph at a time while he interjected to clarify vocabulary, elaborate on the topic or ask display comprehension questions. The students also had a series of comprehension questions in a packet, and John guided them to the appropriate questions throughout the reading. Extract 5 occurs near the beginning of this segment as John directs students to apply the information just read to the first two questions in their packet. These questions were basic display questions: *"¿De dónde es la familia de Shaimaa?"* [Where is Shaimaa's family from?] and *"¿Por qué se trasladaron a Cairo?"* [Why did they move to Cairo?].

Extract 5. Student discourse in relation to the textbook. Day 7.

1.	John:	*Excelente entonces ahora con la información que Jonah acaba de leer, podemos contestar preguntas número uno y número dos*	Excellent, so now with the information that Jonah just read, we can answer questions number one and number two
2.	S?:	*¿Qué?*	What?
3.	S?:	*Sí.*	Yes
4.	John:	*Del paquete y usando oraciones completas también*	From the packet and using complete sentences as well
5.	Students:	*No* ((groan))	No ((groan))

[5] Round robin reading is a whole-class reading strategy in which all students are expected to follow along while individual students take turns reading.

6.	John:	*La primera pregunta y la segunda pregunta Jonah acaba de leer las respuestas. Entonces que bien que tenemos Jonah aquí.*	The first question and the second question Jonah just read the answers. So how great that we have Jonah here.
7.	FS1:	*¿Tenemos que hacer en frases completas?*	Do we have to do in complete sentences?
8.	John:	*Oraciones completas. Yo lo escribí en las instrucciones.* ((students working))	Complete sentences. I wrote it in the instructions. ((students working))
9.	FS2:	*¿Qué es trasladaron?* ((from question #2))	What is *trasladaron*? ((from question #2))
10.	John:	*Moverse. Trasladar es mover la familia.*	To move. *Trasladar* is to move as a family.
11.	MS1:	*No entiendo número uno.*	I don't understand number one.
12.	John:	*Es el párrafo que Jonah acaba de leer. ¿Dónde vivían ellos? ¿Qué es una aldea?*	It's the paragraph that Jonah just read. Where did they live? What is *una aldea*?
13.	MS?:	*De Egípto*	From Egypt
14.	John:	*En una aldea. Sí, una ciudad pequeña, un. Una aldea. De...*	In a small village. Yes, a small city, a. A small village. From…
15.	FS?:	*¿Dónde está?* ((referring to where the information is in the text))	Where is it? ((referring to where the information is in the text))
16.	John:	*En serio, a veces yo pienso que yo les ayudo demasiado. Porque a veces es como dando cucharaditas de comida a un bebé*	Seriously, sometimes I think that I help you all too much. Because sometimes it is like spoon feeding a baby.
17.	S?:	((incomprehensible))	((incomprehensible))
18	John:	*No, ya está en la sección que Jonah acaba de leer.*	No, it's already in the section that Jonah just read.

19.	S?:	*Ésta, ésta barrio?*	This one, this one neighborhood?
20.	S?:	((self-reading)) *Vinieron del sur de egípto.*	They came from southern Egypt.
21.	S:?	((To self or neighbor)) It doesn't say why they moved close though. Oh, *necesitan vida.*	It doesn't say why they moved close though. Oh, they need life.
22.	John:	*¿De dónde es la familia?*	Where is the family from?
23.	FS?:	*El sur de África.*	Southern Africa
24.	FS?:	*Barrio*	Neighborhood
25.	FS?:	*El sur de Egípto*	Southern Egypt
26.	John:	*Viven en el barrio ahora. Lo que Jonah acaba de leer. Vinieron, ellos, no dice ellos, pero sabemos vinieron es plural, sí.* ((reading from text)) *Vinieron de una aldea del sur de Egípto. No puede ser más fácil.*	They live in the neighborhood now. What Jonah just read. They came, they, it doesn't say they but we know that they came is plural, yes. ((reading from text)) They came from a small town in southern Egypt. It can't be any easier.
27.	FS?:	*¿Está bien decir Egípto?*	Is it okay to say Egypt?
28.	John:	*Oración completa, señorita.*	Complete sentence, young lady.

In this extract, student discourse is clearly prompted by the materials as they search for the answers in the text that they have just read. Although the questions are intended to facilitate comprehension of the text, it is clear from the interaction that rather than eliciting academic discourse, they promote basic, communicative functions utilized in a hunt for the correct response. The extract begins with John informing students that they have to read the answers to the first two questions, implying that they should begin writing their responses. In Turn 2, a student immediately asks for clarification, and John repeats his instructions. Immediately after, a student clarifies the guidelines, asking in

Turn 7 if they need to write in complete sentences. This type of question was frequent in nearly all interactions related to handouts or comprehension questions, with students spending various turns clarifying what they needed to write down and in what way. By Turn 8, most of the students are writing responses. One student seeks information regarding an unfamiliar lexical item (Turn 9) while another states confusion about the first question (Turn 11), which leads into the rest of the interaction as John and the students work to understand the simple statement *Vinieron de una aldea de sur de Egípto* [They came from a small village in the south of Egypt].

A focused analysis of the interaction that occurs in Turn 11-28 demonstrates the limited student discourse in relation to the textbook and comprehension questions. The student's statement of *No entiendo número uno* [I don't understand number one] in Turn 11 functions as an expression of confusion. The first question, "Where is Shaimaa's family from?", should be understood by the students since "Where is ____ from?" is a lexical bundle (Schmitt, 2010) learned early in immersion classrooms. This example leads to the conclusion that it is not the question that is causing the student difficulty, but rather the text itself. John picks this up, orally clarifying the word *aldea* [village], which he believes is causing the confusion (Turn 14). Another student joins the conversation at this point at Turn 15, asking where the answer is in the text. In Turns 20-25, other students are having more success with finding the appropriate sentence in the paragraph, but only the language in Turns 23-25 could be considered academic in function as students recount information from the text. Finally, in Turn 27 a student summarizes and simplifies the entire interaction by asking if she can simply write *Egípto* [Egypt] as the

response, a statement which, although centered on the content, functions as a clarification of the guidelines of the task. John's response supports this function, as he focuses on the lack of a complete sentence rather than her incomplete and incorrect answer.

Extract 5 is an illustrative example of how the materials created constraints on students' discourse functions. The reading and comprehension questions were designed to pique students' interest about Northern Africa as they commenced the new chapter, but the content of the questions and the students' confusion about the text instead constrained students to search for the one correct answer in the given paragraph. As such, the discourse functions performed by the students throughout Extract 3 are limited to clarifying guidelines (Turn 7), seeking lexical information (Turn 9), expressing confusion (Turn 11), asking for help (Turn 15), checking responses (Turn 19), and, in only three instances, recounting information (Turns 13, 23-25).

It is also important to note the nature of the students' discourse. Only the utterances expressing communicative functions represent complete sentences, and even these are basic statements or questions that students learn as lexical bundles from a young age – for example, *¿Qué es…?* (Turn 9), *no entiendo* (Turn 11), *¿Dónde está…?* (Turn 15). In the turns in which students are recounting information (Turns 13, 23-25), the utterances consist of only an individual word or short phrase. These examples illustrate that the strong textbook-based content focus of the class leads to discourse that is limited in function to clarifying task logistics or asking for help rather than eliciting higher order functions such as analyzing or evaluating. Zwiers et al., (2014) have argued that a focus on short, correct answers leads students not to push themselves to fully communicate

ideas, instead relying on the teacher to prompt for more information or to expand upon the concepts himself. This limited student discourse in relation to the textbook and related materials has implications for language development as well as academic progress in the immersion setting, which will be further addressed in the discussion.

As noted previously, while the type of interaction demonstrated in Extract 5 was predominant throughout the unit, some materials and activities did elicit a wider range of academic discourse functions. These activities did not directly incorporate the textbook, and instead made use of the PowerPoint or ancillary handouts, which, as noted in the earlier section on curriculum, were sometimes positioned as supplementary to the textbook. Despite their supplementary status, or possibly because of it, these activities afforded opportunities for more varied and complex student discourse, as illustrated in Extract 6.

Extract 6. Student discourse in relation to the PowerPoint. Day 4.

1.	John:	*¿Quién debe beneficiarse de los recursos de un país?*	Who should benefit from the resources of a country?
2.	FS1:	*Los personas que viven allí.*	The people who live there.
3.	John:	*Okay, todas todos los y más o menos igual para todos o algunas personas van a –deben tener más o menos?*	Okay, all the [people] and more or less equal for everyone or some people are going to- should have more or less?
4.	FS2:	*¿Escribimos esto?*	Do we write this?
5.	John:	*No.* nope.	No. Nope.
6.	FS1:	uhhh I don't know.	Uhhh I don't know.
7.	John:	*Okay, Claire, ¿qué piensas tú?*	Okay, Claire, what do you think?

8.	FS3:	*Pienso que son los personas como los africanos de los países y um debe como ser como familias tiene es como um la misma cantidad para cada familia pero si hay más niños hay como un poco más comida para*	I think that they are the people like the Africans from the countries and um it should like be like families have it is like um the same amount for each family but if there are more children there is like a little more food for
9.	John:	*Okay. ¿Hay otras ideas aquí? ¿Qué piensas tú, Jessica? ¿Quién en un páis, y estamos hablando de África occidental y central, quién debe recibir los beneficios de los recursos? Ahora sabemos que no es muy igual. Hay muchos recursos pero hay mucha corrupción. Hay un no está no está balanceado, sí? La situación no está balanceada. En tu opinión, cómo deben compartir o repartir los recursos de un país?*	Okay. Are there other ideas here? What do you think, Jessica? Who in a country, and we're talking about western and central Africa, who should receive the benefits of the resources? Now we know it is not very equal. There are a lot of resources but there is a lot of corruption. There is it's not it's not balanced, yes? The situation is not balanced. In your opinion, how should they share or distribute a country's resources?
10.	FS4:	*Well, los um minores deben tener um*	Well, the, um minors should have um
11.	John:	*Personas de menor edad, cómo ustedes?*	Younger people, like you guys?
12.	FS4:	*Um, sí.*	Um, yes.
13.	John:	*¿Deben recibir más? ¿Porque ustedes son el futuro? ¿Qué piensas tú, Alex?*	Should receive more? Because you are the future? What do you think, Alex?
14.	MS1:	*Pienso que um como todos deben tener como un mínimo de recursos, pero uh um otros personas deben, si tiene como un buen trabajo, deben tener más recursos porque van a ganarlo que*	I think that um like everyone should have like a minimum of resources, but uh um some people should, if [he] has like a good job, [they] should have more resources because they are going to earn it that
15.	John:	*¿Porque es un incentivo para trabajar?*	Because it is an incentive to work?

16.	MS1:	*Sí. Y es más um, pero, como si estás como,* in between *dos* –	Yes. And it is more um, but, like if you are like, in between two-
17.	John:	*entre*	In between
18.	MS1:	*entre dos trabajos uh es como* welfare, *y deben tener recursos si necesitan, pero solo si necesitan*	In between two jobs uh it is like welfare, y they should have the resources if they need, but only if they need
19.	John:	*okay, bien.*	Okay, good
20.	FS5:	*Pienso que las personas sin trabajo deben tener más recursos, como deben beneficiarse más*	I think that people without work should have more resources, like they should benefit more
21.	John:	*Okay, ¿porque tiene más necesidad? Okay.*	Okay, because [he] has more need? Okay.

This interaction centers around the question *¿Quién debe beneficiarse de los recursos de un país?* [Who should benefit from a country's resources?], which is the essential question provided in the textbook for Chapter 13. John chose to remove this essential question from the context of the textbook and incorporate it into a separate activity for which he created a handout. The discussion in Extract 6 is the precursor to this activity, and throughout this interaction the only material used is the PowerPoint slide on which the question is projected. It seems that the supplemental status of the activity and the physical separation from the textbook removes the pressure related to the one-correct-answer paradigm signaled by the textbook. Similar to Extract 1, this interaction is characterized by a dialogic atmosphere in which students share and elaborate on their opinions through longer, more creative discourse.

The materials in this activity are minimal, but in this case the use of limited materials provides opportunities for affordances for more complex, academic discourse than in the material-centered Extract 5. John begins the discussion by posing the question, and a student immediately responds with a basic sentence that functions as a formulation of an opinion (Turn 2). Early in the interaction, one student clarifies the guidelines of the task (Turn 4), and once it has been established that students will not be writing, none of the subsequent turns utilize task-centered communicative functions such as those seen in Extract 5. In fact, the four students who speak after Turn 4 all attempt to present and justify arguments in response to the essential question. It is also important to note that although they are not all able to express their opinions accurately in the target language, three of the four students produce sentence-level discourse, which was less consistently observed in textbook-based interactions.

A closer look at the students' discourse highlights their use of academic functions. In Turn 8, a student directly references Africa as she expresses her opinion that families with more children should receive more resources. It is possible that she is drawing on problems of overpopulation in Africa that were mentioned in previous lessons as she formulates her argument. The next student also expresses an argument in Turn 10, but her intended meaning is not entirely clear since she uses the inaccurate lexical item *minores.* John reformulates her statement, assuming that she meant *personas de menor edad,* or younger people, and she hesitates and then accepts his reformulation. The third student, MS1, has the most success in expressing his argument and providing justification. In his justification, the student produces a complex sentence using the subordinate conjunction

"because" (Turn 14). He then continues his discourse in Turns 16 and 18, further elaborating on his argument to express the nuances of a hypothetical situation. Although his main argument is that those who work should receive more resources, he acknowledges that people "between jobs" might receive resources "but only if they need [them]." In his three-turn discourse, the student utilizes multiple academic functions, including expressing an argument, providing justification, and conjecturing in a hypothetical situation.

What Role do Materials Play in the Content and Language Integration?

Integrating content and language across the curriculum provides teachers and students with meaningful opportunities to engage with language within the content-driven immersion space. Understanding that it is impossible to access content without language, Handscombe (1990) argues that an instructional approach is needed in which "no content is taught without reference to the language through which that content is expressed, and no language is taught without being contextualized within a thematic and human environment" (p. 185). That said, pedagogy that intentionally integrates content and language is still rare in the immersion classroom, and materials are often cited as one challenge of effective integration (Fortune et al., 2008).

In the classroom for this study, intentional content and language integration was limited, and there were no discernable patterns of how the materials impacted the integration. There were a few instances in which John referenced linguistic concepts, such as prefixes, suffixes or verb forms in his efforts to help students understand a text. One notable example occurred in Line 26 of Extract 5. As a reminder, in this turn John

says, "*Viven en el barrio ahora. Lo que Jonah acaba de leer. Vinieron, ellos, no dice ellos, pero sabemos vinieron es plural, sí.* [[They] live in the neighborhood now. What Jonah just read. [They] came, they, it doesn't say they, but we know [they] came is plural, yes]". In this turn, John draws students' attention to the third person plural conjugation of the verb *venir* [to come] while also reminding them that in Spanish the personal pronoun does not need to be stated explicitly. Given its place in the interaction, it appears that this focus on language was not planned in advance, but instead utilized as a scaffolding strategy once it was clear that students were struggling with the text and/or comprehension question.

When asked how he saw the materials impacting content and language integration, John cited the CLOZE activities that he included in the reading comprehension packets as an example. CLOZE activities are a reading comprehension activity in which the teacher deletes specific words from the text, requiring the students to employ various strategies to fill in the blanks and complete the text (Gibbons, 2009). John describes his use of CLOZE activities in the following excerpt from the second interview.

> Sometimes I'll take all verbs out. And I'll- they'll be four sentences, I took the four verbs out. Okay. I don't think there's any better reading comprehension than that for language. It's like, okay, you have to know the difference between the verbs. And not just the *ser* [to be] and *estar* [to be] ones, you know…any number of, you know, *establecer* [to establish], *colonizar* [to colonize], the ones based on that unit that were more, that you have to think about. (Interview #2, 12/31/16)

Described this way, the CLOZE activities are an example of a material that leads students to engage with both the language and content, particularly if the verbs are provided in infinitive form and students need to conjugate them accurately. In the unit

observed for this study, CLOZE activities were used three times. The first was directly from the published materials, and the second and third were teacher-created. The first two activities included word banks, and all the words were content-specific nouns. The third activity did not include a word bank and was more challenging because the responses needed to be found in the textbook; however, the sentences also elicited only nouns. With this in mind, the CLOZE activities in this unit functioned more as a content comprehension check than an opportunity for students to engage with language through content.

The CLOZE activity as described by John is one way that materials might have been expected to play a role in content and language integration. Other methods of using materials in content and language integration might stem from the types of activities suggested by Lyster (2007) in his counterbalanced approach, such as highlighting specific grammatical features in the text through typographical enhancement or incorporating content-based tasks that require students to use the language in meaningful, content-based ways. Because published materials used in immersion classrooms are not designed with the needs of immersion students in mind, it is expected that the teacher will need to create the materials that integrate content and language.

Summary of Results

Examining the reality of the materials in use in John's classroom demonstrated that materials played a variety of important roles in the secondary classroom ecology. In terms of content instruction, some materials carried more weight than others as vehicles of important content, with the textbook becoming the *de facto* curriculum of the unit. The

fact that students nearly always engaged with the textbook through display reading comprehension questions created a one-correct-answer paradigm that seemed to impact nearly all of the classroom activities. Language instruction was very minimal in John's class, and the materials were not designed with any type of language instruction in mind. The language teaching that did occur was limited to vocabulary instruction, with new words chosen from the written texts and the PowerPoint serving as an instructional support for the teacher. The materials also appeared to significantly impact student language use. Activities associated with the textbook or most of the handouts elicited student discourse that was mainly limited to communicative functions and short utterances. More complex, academic discourse occurred when students were engaged with referential questions presented on the PowerPoint. Finally, the materials did not noticeably impact content and language instruction in this class.

Importantly, the roles that the materials played seemed to be beyond those for which they were designed, the implications of which will be presented in the discussion. In other words, while some of the effects of the materials appear to stem from their inherent design, such as the inclusion of display questions and a lack of language focus, other effects could be attributed to how the materials were employed by John and the students, such as the choice of words for vocabulary instruction. The following discussion will examine more generally how the materials and the classroom ecology impacted one another, focusing specifically on the relationships among the materials, the ecological *structures* related to content instruction, and the student discourse.

Chapter 5: Conclusions, Implications, and Future Research

The purpose of this study was to explore the roles that materials play in the classroom ecology of a secondary Spanish immersion classroom. Due to the complex nature of the immersion classroom, in which content and language are taught and learned simultaneously, the scope of the study was refined to examine how materials impacted content instruction, language instruction, language use, and content and language integration in one classroom. The findings clearly demonstrate that the materials played numerous crucial roles that interacted to form dynamic relationships. In the first part of this chapter, the discussion will focus on two of the most salient relationships – the textbook as curriculum and materials and classroom discourse – that appear to have ecological consequences in the classroom under investigation. In the following section of the chapter, I will discuss the implications of these relationships for immersion classroom pedagogy, immersion materials development, and teacher education. Next, I will outline the limitations of this study. Finally, I will make several suggestions for future research.

Ecological Relationships Among the Roles of Materials – Student Discourse Impacted by Ecological *Structures*

The data as whole seem to tell a story in which the materials foster *processes* that interact to develop various *structures* within the classroom ecosystem. Classroom ecosystems are complex systems that cannot be understood simply through cause and effect, leading some writers to emphasize the need for studying processes rather than linear, causal relationships (Bateson, 1979; Capra, 1996 as cited in van Lier, 2004). In John's classroom, the phenomena of *textbook as curriculum* and the associated one-

correct-answer paradigm seem to serve as *structures* that build on one another in a relationship that functions to constrain student discourse.

When taking into the account the various interlocking relationships that develop from the *textbook as curriculum* phenomenon, the textbook appears to assert considerable power that permeates throughout the ecological system of this classroom. Before examining the relationships formed through the *textbook as curriculum*, it is valuable to discuss how the textbook became a powerful object in the classroom. Luke, De Castell, and Luke (1989) focus on a social perspective when they argue that texts receive their power through the ways that they are used by teachers and schools. In this classroom, several choices by the teacher and students converged to center the textbook as a powerful entity. First and foremost, much of the information on the unit exam was drawn directly from the three textbook chapters on which many of the classroom activities focused. Because assessments explicitly communicate to students what information or skills are most important, the unit exam is a powerful resource for determining the source of legitimate knowledge in the classroom. Previous scholars have noted the centrality of the textbook in the classroom, often highlighting its inherent authority as the source of knowledge. Nunan (1991), for example, states that for both students and teachers "what gets included in the materials largely defines what may count as 'legitimate knowledge' in the classroom" (p. 210). Although this issue is slightly more complicated in John's classroom as a variety of different materials are utilized for different purposes, the connections between the textbook and the unit exam are clear, further underscoring the textbook's legitimacy in terms of knowledge compared to the other materials.

Furthermore, when working with the textbook, students completed packets of reading comprehension questions that mainly contained display questions asking students to report the correct answer from the text. Brown (2014) draws on Luke et al. (1989) in his assertion that teachers "train children to treat what is in the textbook as correct by requiring the production of textbook content in tests and through classroom questioning" (p. 659). Evidence of such training is observed in the findings as the textbook takes on the role as the *keeper of information* in which the students search for the correct answers, even asking John to help them "look for" answers when they could not find the corresponding information quickly.

As was introduced in the findings, the power of the textbook in conjunction with the use of display comprehension questions fostered a one-correct-answer paradigm *structure* in the classroom. Within this paradigm, the materials communicated to the students that their task was to find and report a correct answer rather than utilize other academic skills such as synthesizing or inferring to apply their knowledge to different contexts. This *structure* appeared to permeate many, although not all, of the activities used throughout the unit, even those for which the textbook was not physically present. As such, the *textbook as curriculum* and one-correct-answer paradigm became foundational components of this classroom's ecosystem that seemed to directly inform the nature and content of the student discourse.

When completing activities associated with the textbook, such as responding to written comprehension questions, student discourse was noticeably limited. The vast majority of student output during these activities were communicative functions utilized

to understand the task and find the correct answer. The utterances themselves often consisted of short, basic sentence structures with one clause. Although students did take up some of the content-specific vocabulary as they talked around the text, their use of the vocabulary was logistical rather than applied, such as asking where to find the word in the text or determining how to incorporate it into the written response. This limited discourse seems to directly stem from the one-correct-answer paradigm created by the *textbook as curriculum*.

In contrast to the limited discourse observed around textbook discussions, activities in which the teacher and students were physically removed from the textbook seemed to elicit a wider range of language functions as well as slightly more long and complex language from the students. These activities often began with open or closed referential prompts that, by nature, encouraged the students to justify their responses with previous knowledge of personal connections. Guerrettaz and Johnston (2013) also found that student produced richer language when the materials provided opportunities for them to relate the activity to their own lives and experiences. It is important to note that it was not only the inherent referential nature of these activities, but also their physical design that communicated to students that their answers could be longer and more complex. For example, several of these activities were conducted without additional handouts, communicating to the students that they did not need to write, a task that was most frequently associated with the one-correct-answer paradigm. In moments when they engage with the students away from the textbook, materials such as the PowerPoint slides

create opportunities for affordances that step outside the one-correct-answer paradigm, or *structure*, of the classroom ecology.

Implications for Immersion Pedagogy, Materials Development, and Teacher Education

This study clearly demonstrates that materials play a crucial role in the secondary immersion classroom ecology. As of right now, secondary immersion classrooms have been understudied, and few research-based resources exist for secondary immersion educators regarding pedagogical best practices. This study illuminates several areas in which it would behoove immersion educators to be mindful of how teachers' uses of materials are benefitting or constraining their students' progress toward the three-tiered goal of immersion programs: academic achievement, additive bilingualism, and cross-cultural competence (Hamayan et al., 2013; Fortune & Tedick, 2008). This study also illustrates the need for materials that are specifically designed for the immersion classroom, and recommendations for design modifications are made below.

Implications for overall language development. The fact that the textbook and handouts with display questions seem to greatly constrain student discourse has important implications for language development in this secondary classroom. Although the students in John's class were given ample opportunities to speak in whole group interactions and work with peers, thus potentially engaging in meaningful, negotiated interactions, the reality was that their discourse was often stunted, both in terms of range of functions and linguistic complexity. In response to data from sixth grade French immersion students that showed grammatical and sociolinguistic inaccuracies in students'

target language, Swain (1985) developed the Output Hypothesis, which states that along with receiving comprehensible input (Krashen, 1981), learners also need to engage in meaningful, comprehensible output in order to fully acquire a second language. The term meaningful is used to imply that this output should accomplish high-level language functions rather than consist of rote repetition of single items or phrases. Comprehensible output in meaningful contexts is necessary for acquisition because it creates opportunities for students to test hypotheses about the target language while also pushing them to move from a semantic to a syntactic analysis of the language (Swain, 1985).

In John's classroom, as in many immersion classrooms, the students were not pushed to produce comprehensible output that accurately conveyed their meaning since the overall focus was on semantic understanding. Moreover, given that the language students did produce was syntactically and functionally limited, they were not actively testing out hypotheses about how to accurately create more complex or academic discourse – the materials and the assessments used did not encourage such a level of discourse. Swain (1985) argues that language acquisition occurs when students produce output that "extends the linguistic repertoire of the learner as he or she attempts to create precisely and appropriately the meaning desired" (p. 252). Furthermore, the production of more frequent extended output offers opportunities for a wider range of corrective feedback.

While the data of this study is not intended to support claims about language acquisition, it is possible to suggest that without a more intentional focus on pushing student output, the language development of these immersion students will not progress

as quickly as desired or at all. Fortune and Tedick (2015) reported that oral proficiency scores of Grade 8 Spanish immersion students were not significantly higher than those of Grade 2 and Grade 5 immersion learners. When discussing several possible reasons for this lack of oral proficiency growth, Fortune and Tedick speculated that the Grade 8 students in their study spent much less time learning in the immersion language than students in primary grades. Based on the findings of the present study, however, it is also possible that materials and assessments used in secondary immersion programs might not afford opportunities that push students' language development.

The materials and assessments affected student output, and therefore language development, by creating an answer-focused paradigm in which student language functions were often limited. Furthermore, the display reading comprehension questions required that students simply seek and report the correct answer, which necessitated only basic discourse. Even the few more advanced reading comprehension questions that asked students to apply information did not produce more complex discourse. Students responded to these applied reading comprehension questions with communicative functions such as complaining or seeking help rather than academic functions. In general, students only produced richer discourse when presented with a teacher-created referential question on the PowerPoint. It is of utmost importance that immersion students are competent in utilizing academic functions in the target language so that they can access the more abstract and complex academic content of the secondary classroom. It appears that in order to push students to produce more comprehensible output, the materials need to offer affordances for a more dialogic space in which students are engaging with the

content material while using language to express their arguments, reasons, experiences and opinions in a comprehensible manner. Examples of how materials might foster a more dialogic classroom are outlined below in the materials development section.

Implications for vocabulary instruction. In the investigated classroom, language instruction was limited to vocabulary, and the materials mainly functioned as the source of unknown words. Much of John's vocabulary instruction focused on Tier 2 words, which is recommended in the literature as the most productive use of vocabulary instruction time (Beck et al., 2002). The students, however, seemed to focus their own vocabulary learning on content-specific Tier 3 words, a phenomenon that appears to relate to the content-oriented, one-correct-answer paradigm of the class. Regardless of the word being taught, the vocabulary instruction that occurred in this classroom was geared toward definitions and meanings in context, with the goal of understanding the text rather than engaging in cognitively challenging work on word meanings.

In his review of previous literature on vocabulary instruction in schools, Graves (2015) demonstrates that vocabulary instruction that occurs in classrooms tends to be "thin", with teachers focusing on definitional and contextual approaches to teaching words (p. 3). Fortune et al. (2008) show that some immersion teachers are intentional about expanding their students' lexical repertoires by supplying vocabulary, structuring activities to purposefully elicit focal words, pushing students to be more lexically specific, engaging students with discussions about synonyms, and brainstorming examples of connectors. Immersion teachers are quite skilled at using scaffolds to help their students reach a shallow understanding of new words, but gaining a deep knowledge

of vocabulary becomes increasingly more challenging in secondary classrooms where more abstract concepts and language appear.

Throughout the data, John showed an intention to introduce his students to new vocabulary words as they arose from the text; however, the vocabulary instruction that he employed was not robust and varied enough to be effective. Beck et al. (2002) recommend that vocabulary instruction must be frequent, rich and extended if the words are to permanently enter a student's vocabulary repertoire. Students must encounter the words multiple times and in ways that require them to actively use and think about word meanings while creating associations among words. The published materials observed in this study did not inherently offer any resources for robust and varied vocabulary instruction, which is not surprising given that they are designed to teach social studies content, not language. The irony, of course, is that it is precisely through language that the social studies content is communicated. Through the materials, students encountered a new word in one, unique context, and even key terms were rarely repeated over the course of a text. With that in mind, it is up to the teacher to intentionally supplement the published materials with additional activities that introduce students to the different facets of a word's meaning, engage them in exploring the metalinguistic components of the words, and push them to create new and creative connections among the words.

John's use of the PowerPoint as a resource for supporting vocabulary instruction shows the potential of that material for providing vocabulary activities in tandem with a published text. In the observed classes, John sometimes used the PowerPoint as a guide, reminding him which vocabulary to define throughout the reading. Although this use of

the PowerPoint did not directly support effective vocabulary instruction, it does demonstrate that slides could be designed to follow the sequence of the text while introducing vocabulary development activities that are embedded within the content-focused reading. For example, the teacher could create a series of PowerPoint slides in which each slide prompts students to answer true/false content-based statements that rely on the meaning of the new word as central to choosing the correct answer. In this way, students would engage with the word several times over the course of the reading and would be asked to apply the word to a new, but similar context. By using the PowerPoint in this way, the teacher can maintain the flow of the reading activity while incorporating more robust vocabulary instruction.

Implications for materials development. As shown in the previous sections on language development and vocabulary instruction, the published materials offered few explicit opportunities for language instruction, playing a large part in the overall content orientation of the observed class. Given the powerful roles that materials played in this classroom, it is crucial that future materials for immersion instruction be designed to intentionally integrate content and language in an explicit and systematic manner to facilitate a continued focus on language development alongside the academic content. Currently, few, if any, materials used in secondary immersion classrooms are created specifically for that context. This study clearly demonstrates that materials such as texts, handouts and videos that are solely designed to engage students with content are not sufficient for the unique learning experience of the immersion classroom.

In order to better integrate content and language within the materials, some adaptations would need to occur. First and foremost, the texts provided to the students, whether they be the main textbook or separate handouts, need to use language that is more complex morphosyntactically and at the discourse level. As demonstrated in the textbook analysis presented in the findings, the textbook presented a limited range of verb tenses, mainly utilizing the present tense, the preterite and imperfect tenses/aspects, and the present perfect tense (which was not shown in the analyzed portions). Most of the verbs were in the indicative mood, with only scattered and infrequent uses of the subjunctive mood. Furthermore, many of the sentences from the textbook utilized basic syntax, with very few compound or complex sentences. The linguistically restricted writing in the materials is problematic for the immersion contexts for two main reasons. First, students were not receiving input that represents the full functional range of the target language, limiting the opportunities for them to notice and engage with all grammatical aspects of the target language. Second, by not presenting more complex language, the text did not offer natural affordances for the teacher to incorporate language instruction during text-based activities.

Along with providing richer linguistic input, immersion materials need to include language-focused sections embedded within the content information. These language-focused modifications could take many forms, from typographic enhancements highlighting a specific linguistic feature that is concurrently addressed as a side box in the text to a unique chapter section that asks learners to examine a discourse-level feature of the previous texts. The purpose of these language-focused features would not be to halt

the content instruction in favor of an explicit grammar lesson, but rather to intentionally draw students' (and the teacher's) attention to the linguistic features that are used in the subject matter instruction (Lyster, 2007; Swain, 1988). In this way, content and language instruction would be more seamlessly integrated in a naturally occurring manner, and the material itself would provide affordances for the teacher and students to engage with language and content simultaneously.

Immersion materials also need to encourage dialogic communication through the way information is presented – the voice of the text – and the questions that are posed. In an interesting discussion of the language and authority of textbooks from traditional classrooms, Olson (1989) argues that textbooks take on a unique authority in the classroom due to their particular linguistic forms (such as display questions), explicit prose, and lack of author identity. Textbook authors make the writing explicit by using logical markings and specific structures. This explicitness serves to make the meaning encoded in the text simultaneously autonomous and unequivocal. Furthermore, the removal of an author's voice and identity through expository, neutral language, makes it appear as though the meaning in the text comes from a "transcendental source" (Olson, 1989, p. 239) and is thus immune to criticism. Therefore, unless a teacher intentionally instructs students to interact critically with texts, they will naturally understand their sole responsibility as a reader to be to master the knowledge, as is communicated by the authoritative form of the textbook.

In contrast to Olson's argument that textbooks are inherently autonomous and without identity, Guerrettaz and Johnston (2013) noted that the textbook used in their

study was sometimes portrayed as a "human participant with a will and a purpose" (p. 785). This attribution of agency for the inanimate material occurred when the teacher referred to the unspecified author as "they", particularly as he outlined the instructions of a task with wording such as "*They* [emphasis added] want you to complete these sentences using 'even though' or 'because'" (Guerrettaz & Johnston, 2013, p. 785). The teacher's discourse positioned the textbook as a semi-identified actor with an authority in the classroom to make the students complete tasks in a specific way. Interestingly, in the present study John never referred to the author of the materials in his discourse, and the content (facts) of the textbook and comprehension questions were always taken up uncritically. One possibility for this difference is that the textbook from the Guerrettaz and Johnston study was a grammar reference and exercise book, designed specifically to elicit student practice of language through grammar-based activities that required specific instructions, whereas the social studies textbook used in this study was designed to disseminate facts. Furthermore, the fact-based, one-correct-answer paradigm that permeated throughout John's classroom might have negated the creation of affordances for analytical responses to the materials, responses that inherently position the materials as having an identity that might be critiqued. The voice and positioned agency of materials, therefore, appear to be influenced by their purpose and design as well as by the classroom ecology itself.

Tomlinson (1998) also takes up the idea of a text's voice in his recommendations for language learning materials. Like Olson, Tomlinson states that conventional language learning materials are "de-voiced and anonymous," revealing little about the interests or

experiences of the author (p. 8). This lack of voice communicates to learners that the materials are testing them rather than supporting them in their learning. In response, Tomlinson recommends that materials writers employ a less formal style, sharing opinion and preferences like a teacher might. He also suggests that textbook authors employ features of orality in their written language, such as using the active rather than passive voice and incorporating informal discourse features such as contractions. While these recommendations would not be wholly appropriate for the immersion context in which students do need to be exposed to academic language and formal styles of writing, the overall idea of including the author's voice in the text so that the student can more naturally enter into a dialogue with the text is appealing for creating a more dialogic classroom.

In John's classroom, the most significant factor in the creation of a monologic space was not the nature of the textbook itself, but rather the way that students were directed to engage with it. In this context, monologic refers to a classroom paradigm in which knowledge is being transmitted from an authority (teacher or text) to the students, who are not invited to question the veracity of the statements (Beers & Probst, 2013). By consistently posing display comprehension questions, the reading comprehension packets communicated to the students that the information in the textbook was to be reported without analysis or critique. A dialogic classroom, on the other hand, is one in which teacher and students are together co-constructing the classroom knowledge. In a dialogic classroom, student engagement is highly interactive, which has positive results for both academic achievement and language development (see Verplaetse, 2000). Moreover,

assessments in a dialogic classroom might be designed to reward students for the ability to provide evidence for a hypothesis, critically analyze the point of view of a writer of a text, or even come up with more one possible answer to a question.

In order for immersion classrooms to be more dialogic, and for students to utilize diverse and complex language functions, materials need to engage students with the content information in more dynamic ways. It is here that the distinction between the impact of the inherent nature of the materials and how materials are employed by the teacher becomes problematic. While some changes to the design of the materials may lead to more opportunities for dialogic talk, it is up to the teacher to actively create dialogic spaces through the planning of interactive activities, critical assessments, and an intentional use of his or her own talk. Much of the current language learning research on dialogic classrooms focuses on teacher talk (e.g., Beers & Probst, 2013; McNeil, 2012; Verplaetse, 2000). Many of John's follow-up moves in the excerpts shown in Chapter 4 function to evaluate and reformulate student thinking rather than to open space for students to elaborate themselves. By responding with "yes, and…" or "tell me more" instead of "yes, but…", John's own discourse could help create a dialogic paradigm within the classroom. Outside of teacher talk, though, future research may wish to examine the nature of materials and the roles that they play in dialogic classrooms. The main suggestion for materials development in terms of facilitating a dialogic classroom is for materials to pose referential questions that require elaboration and explanation to be fully answered and to use assessments that reward this type of critical thinking. Furthermore, designing materials that foster reading comprehension activities that ask

students to apply their knowledge of the text, such as margin questions or graphic outlines (Gibbons, 2009), can help students interact with the texts in a more dynamic manner.

Implications for teacher education. Given the vast and complex roles that materials played in John's classroom, it appears imperative that immersion teachers receive professional development in how to use materials most effectively in their classrooms. Very little of the current immersion literature discusses materials, and resources that do address materials often focus only on how to identify and select appropriate materials (for example Hamayan et al., 2013). As alluded to previously in this chapter, scholars on materials development have conflicting views about the source of materials' power and influence in the classroom. Some argue that the inherent structure and language of academic texts communicate a natural authority (Olson, 1989), whereas others believe that materials receive their power through the ways that they are used and positioned by the teacher and/or greater school community (Luke et al., 1989). The data from John's classroom suggest that both factors were at play. Therefore, future resources for immersion teachers need to offer teachers tools with which to analyze and adapt the materials that they are provided while also explicitly addressing how teachers might use materials productively in their classrooms.

First, it is important that immersion teachers have the skills and metalinguistic knowledge of the target language to analyze the linguistic affordances offered by the materials that they use. As the data showed in this study, the content-focused social studies textbook did not model a wide variety of morphology or syntax for the students.

On the other hand, it did utilize a considerable amount of Tier Two and Tier Three vocabulary, providing opportunities for vocabulary instruction. Immersion teachers, particularly at the secondary level, are often trained as content teachers and might not receive additional training about the importance of linguistic input for language development. Therefore, their instinct is to teach the vocabulary without focusing on the syntax or discourse-level language used in the text. These teachers would benefit from professional development that redirects their attention toward a detailed examination of the language that materials employ when addressing the content. This would allow immersion teachers to assess the value of materials in terms of both content and language as well as guide them in how to adapt the text in order to offer a richer linguistic input while scaffolding content comprehension.

Several studies from the CLIL context have shown that teachers frequently create or adapt materials to meet the linguistic levels of their students and provide more scaffolding for comprehension of the academic content (Moore & Lorenzo, 2007; Morton, 2013), and anecdotal evidence from the immersion contexts suggests that immersion teachers do the same. As Moore and Lorenzo (2007) explain in their empirical study on text adaptation, it is important that teachers understand how different adaptation styles change the language of the text. As examples, *simplification* removes advanced linguistic structures whereas *discursification* changes the discourse style from scientific to pedagogic discourse. If a teacher uses the same adaptation method repeatedly, he or she might deprive students of important linguistic input, be it at the morphological, syntax or discourse-level. Given the frequency with which materials adaptation occurs in

the immersion classroom, it is important that teachers understand the linguistic affordances that their materials do or do not offer so that they can adapt texts to provide the richest language experience possible for their students.

In terms of materials use, it is clear from this study that how materials are employed in the classroom can have a strong impact on the monologic or dialogic nature of the classroom. Data from this study suggest that it would behoove the teacher to critically analyze the type of student and teacher discourse that occurs in relation to materials, and to subsequently reflect on how the positioning of materials in the classroom might impact classroom discourse. An effective use of materials would be as a resource that fosters a range of academic output from the students as they analyze and critique the information that is presented. Teacher education programs should guide teachers in developing the skills needed to step back and observe the type of discourse that students use as they engage with different kinds of materials. As demonstrated in this study, student discourse is a valuable barometer for the effectiveness of materials in the immersion classroom because it demonstrates the level of academic thinking that is occurring, represents opportunities, or lack thereof, for language development, and indicates the instructional paradigm of the classroom. This type of analysis would be most effective if teachers then also examined their own discourse in order to better understand the affordances that their questions and follow-up moves offer for eliciting more and more complex student language.

Limitations

The limitations of this study were by and large related to time constraints and methodological decisions during the data collection process. In an attempt to be unobtrusive in the classroom, I made several decisions that constrained the scope of my data, thus at times limiting the power of the analysis. I will outline these decisions below as well as suggest methodological changes that I would make for future research.

First, I decided to focus my audio recordings on the entire class rather than choose several focal students to record. This choice was deliberate as, due to the nature of the IRB process, I did not have time to conduct preliminary observations through which I might select focal students. However, the classroom that I observed was quite energetic, and it was common for several students to be speaking at the same time, often shouting across the room. I was also unprepared for the large amount of individual and small group work time, making audio-recordings difficult. I therefore found that the classroom discourse was challenging to accurately transcribe, causing me to eliminate the quantitative analysis of discourse that was initially proposed.

Although I was able to transcribe a considerable amount of the whole class discourse, my transcriptions of individual or small group work consisted mainly of two to four turn interactions. Because I could only transcribe the voices that I could hear clearly, the loudest students' language appears the most frequently in the transcripts. It is quite possible that the data were skewed toward those students who loudly expressed confusion and demanded help, whereas the voices of students who understood the task or were working quietly with a partner were not captured on the audio. In the future, when

conducting classroom observation studies with audio-recordings, I intend to make a stronger effort to focus my recordings on focal students who represent a continuum of academic and linguistic ability. This would be particularly valuable in terms of materials research, as it would allow the researcher to tease apart how individual students interact with and react to different types of materials.

The second main limitation to this study was the lack of reflection from the teacher and the students on how they felt the materials impacted their classroom. Morgan and Martin (2014) argue that a holistic ecological research agenda should include "both teacher and student reflections on the extent to which the materials constrained or enabled the co-creation of a learning opportunity" (p. 669). In an effort to streamline the IRB process due to the limited time I had to complete the study, I decided not to conduct student interviews. In retrospect, including some student perspectives about the materials and how they engaged with them might have greatly strengthened the analysis. This is particularly important for an ecological perspective that intends to focus strongly on the relationships among the ecological resources, including the participants. Moreover, although I interviewed John before and after the study, I found that the questions I asked did not elicit much useful data regarding the materials themselves. It is interesting to note that during the interviews, I got the sense that John sometimes had trouble distinguishing between the materials themselves and his pedagogical decisions. It is possible that with professional development focused explicitly on materials as suggested earlier, teachers would have more tools with which to articulate the roles that materials play in their classroom.

Research implications

This study demonstrates that materials have interesting and important impacts on the immersion classroom, and future research should further explore the different roles that materials play. First and foremost, secondary immersion classrooms are very distinct spaces, particularly because secondary immersion programs represent a wide spectrum of program models, curricula and pedagogical beliefs. Future research on immersion materials should examine the roles of materials in different subject areas. This study focused on a social studies unit, but it is quite likely that materials play different roles in a science or language arts class. By examining materials across different contexts, it will be possible to explore if salient themes exist that are inherent to the materials themselves rather than the subject matter.

Second, more research on the relationship between the materials and student discourse is necessary. Because of its role in academic achievement and language development, student discourse has been widely investigated in the content-based instruction and immersion contexts (see Lyster, 2007); however, most of this research has focused on the effect of teacher talk, such as the use of oral feedback and scaffolding, on student discourse. The present study suggests that the materials also impact the nature and type of discourse that students produce, and further research is needed to ascertain exactly how the materials affect student talk.

Third, future research should explore the effects of materials that are designed to facilitate more explicit integration of content instruction and language instruction. Because each immersion classroom functions differently, these materials would be most

effective if designed in conjunction with the teacher who is incorporating them into his or her class. It would be profitable to examine how materials that intentionally counterbalance language and content affect the instructional focus of a secondary immersion classroom.

Finally, research on immersion teacher professional development should examine how to prepare teachers to analyze, adapt and use materials more productively in their classroom. Although research has shown that finding and using appropriate materials is a challenge for immersion teachers (Fortune et al., 2008; Hernández, 2015; Walker & Tedick, 2000), no studies have yet examined how immersion teachers actually analyze and adapt materials for their classrooms, nor has any research addressed best practices for doing so in terms of academic achievement and linguistic development. Until publishing companies are actively developing materials that are specifically designed for immersion contexts, teachers will continue to find and adapt their own resources. It is necessary that the research agenda seek to support teachers in this process.

Conclusion

This study sought to open the door for research about immersion materials and the role that they play in the classroom. As an exploratory study, this work begins to define the research agenda for future classroom-based studies associated with materials development and materials use. This study provides interesting insights into how materials can factor into the creation of an instructional paradigm that permeates throughout the classroom ecology. It also shows that materials can have unintended consequence on student discourse, leading to questions for further research about what

teachers can do to change the ways materials affect their classrooms. Overall, this study shows that it is necessary that teachers critically analyze the ways that the materials that they employ constrain or foster interactive classroom dynamics. Teacher must also actively assess how their pedagogical decisions position the materials in relation to the content and language curricula. This study brings to the forefront some real challenges with the materials currently available to immersion teachers, and it also presents opportunities for positive changes in the future.

References

Allen, P.,M. Swain, B. Harley and J. Cummins. (1990). Aspects of classroom treatment: toward a more comprehensive view of second language education. In B. Harley, P. Allen, J. Cummins and M. Swain (Eds.) *The development of second language proficiency* (pp. 57–81). Cambridge: Cambridge University Press.

Banegas, D. L. (2012). CLIL teacher development: Challenges and experiences. *Latin American Journal of Content and Language Integrated Learning*, *5*(1), 46–56. http://doi.org/10.5294/laclil.2012.5.1.4

Banegas, D. L. (2014). An investigation into CLIL-related sections of EFL coursebooks: Issues of CLIL inclusion in the publishing market. *International Journal of Bilingual Education and Bilingualism*, *17*(3), 345–359. http://doi.org/10.1080/13670050.2013.793651

Bateson, G. (1979). *Mind and nature: A necessary unit.* London: Fontana.

Beck, I. L., & McKeown, M. G. (2001). Text talk: Capturing the benefits of read-aloud experiences for young children. *The reading teacher*, *55*(1), 10-20.

Beck, I.L, McKeown, M.G., & Kucan, L. (2002). *Bringing words to life.* New York, NY: The Guilford Press.

Beers, K., & Probst, E. (2013). *Notice & note: Strategies for close reading*. Portsmouth, NH: Heinemann.

Belisle, T. (1997). Developing vocabulary knowledge in the immersion classroom. *ACIE Newsletter* 1(1), Bridge Insert, 1-8.

Blanco-Iglesias, S., Broner, J., Tarone, E. (1995). Observations of language use in Spanish immersion classroom interactions. In L. Eubank, L. Selinker & M. Sharwood Smith (Eds.) *The current state of interlanguage: Studies in honor of William Rutherford* (pp. 241-258). Amsterdam/Philadelphia: John Benjamins Publishing Company.

Boyd, M., & Rubin, D. (2006). How contingent questioning promotes extended student talk: A function of display questions. *Journal of Literacy Research, 38*(2), 141-169.

Bromley, D.B. (1986). *The case-study method in psychology and related disciplines*. New York: John Wiley and Sons.

Broner, M. (2001). *Impact of interlocutor and task on first and second language use in a Spanish Immersion Program.* CARLA Working Paper #18, Center for Advanced Research on Language Acquisition, University of Minnesota, Minneapolis.

Broner, M., & Tedick, D.J. (2011). Talking in the fifth-grade classroom: Language use in an early, total Spanish immersion program. In D.J. Tedick, D. Christian, & T.W. Fortune (Eds.), *Immersion education: Practices, policies, possibilities* (pp. 166-186). Bristol, UK: Multilingual Matters.

Brown, D. (2014). The power and authority of materials in the classroom ecology. *The Modern Language Journal*, *98*(2), 658–661. https://doi.org/10.1111/j.1540-4781.2014.12095.x

Bovellan, E. (2014). *Teachers' beliefs about learning and language as reflected in their views of teaching materials for content and language integrated learning (CLIL)* (Doctoral dissertation). University of Jyväskylä,

Cammarata, L. (2009). Negotiating curricular transitions: Foreign language teachers' learning experience with content-based instruction. *Canadian Modern Language Review/ La Revue Canadienne des Langues Vivantes*, *65*(4), 559–585. http://doi.org/10.3138/cmlr.65.4.559

Cammarata, L., & Tedick, D. J. (2012). Balancing content and language in instruction: The experience of immersion teachers. *The Modern Language Journal*, *96*(2), 251–269. http://doi.org/10.1111/j.1540-4781.2012.01330.x

Canagarajah, S. (1993). Critical ethnography of a Sri Lankan classroom: Ambiguities in opposition to reproduction through ESOL. *TESOL Quarterly, 27*, 601–626.

Capra, F. (1996). *The web of life: A new scientific understanding of living systems.* New York: Anchor Books.

Creswell, J.W. (1998). *Qualitative inquiry and research design: choosing among five.* Thousand Oaks, CA: Sage.

Cenoz, J., Genesee, F., & Gorter, D. (2013). Critical analysis of CLIL: Taking stock and looking forward. *Applied Linguistics*, *35*(3), 243–262. http://doi.org/10.1093/applin/amt011

Chamot, A .U., & O'Malley, J. M. (1994). *The CALLA handbook: Implementing the cognitive academic language learning approach*. Reading, MA: Addison-Wesley Publishing Co.

Coyle, D. (2008). CLIL-A pedagogical approach from the European perspective. In N. Van Dusen-Scholl & N.H. Hornberger (Eds.) *Encyclopedia of Language and Education* (pp. 97–111). Berlin: Springer Reference.

Coyle, D., Hood, P., & Marsh, D. (2010) *CLIL: Content and language integrated learning.* Cambridge: Cambridge University Press.

Dalton-Puffer, C. (2006). Questions in CLIL classrooms: Strategic questioning to encourage speaking. In A. Martinez-Flor & E. Usó (Eds.), *Current trends in the development of the four skills within a communicative framework* (pp. 187-213). Berlin: Mouton de Gruyter.

Dalton-Puffer, C. (2011). Content and language integrated learning – from practice to principles? *Annual Review of Applied Linguistics* 31: 182–204.

Dutro, S., & Moran, C. (2003). Rethinking English language instruction: An architectural approach. *English Learners: Reaching the Highest Level of English Literacy.*, 227–265. https://doi.org/10.1598/0872074552.10

Finocchiaro, M., & Brumfit, C. (1983). *The functional-notional approach.* NY: Oxford University Press.

Flowerdew, J. (1990). Problems of speech act theory from an applied perspective. *Language Learning*, *40*, 79-105

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry, 12*(2), 219-245.

Fortune, T.W. (2001). *Understanding immersion students' oral language use as a mediator of social interaction in the classroom* (Unpublished doctoral dissertation). University of Minnesota, Minneapolis, MN.

Fortune, T. W., & Tedick, D. J. (Eds.). (2008). *Pathways to multilingualism: Evolving perspectives on immersion education* (Vol. 66). Multilingual Matters.

Fortune, T. W., & Tedick, D. J. (2015). Oral proficiency assessment of English-proficient K–8 Spanish immersion students. *The Modern Language Journal*, *99*(4), 637–655. http://doi.org/10.1111/modl.12275

Fortune, T. W., Tedick, D. J., & Walker, C. (2008). Integrated language and content teaching: Insights from the immersion classroom. In T.W. Fortune & D.J. Tedick, (Eds.) *Pathways to multilingualism: Evolving perspectives on immersion education* (pp. 71–96). Clevedon, UK: Multilingual Matters.

Garton, S., & Graves, K. (2014). Identifying a research agenda for language teaching materials. *The Modern Language Journal*, *98*(2), 654–657. http://doi.org/10.1111/j.1540-4781.2014.12094.x

Genesee, F. (1987). *Learning through two languages.* Boston, MA: Heinle & Heinle Publishers.

Gibbons, P. (2009). *English learners, academic literacy, and thinking: Learning in the challenge zone.* Portsmouth, NH: Heinemann.

Graves, M. F., Baumann, J. F., Blachowicz, C. L. Z., Manyak, P., Bates, A., Cieply, C., … Von Gunten, H. (2013). Words, words everywhere, but which ones do we teach? *Reading Teacher*, *67*(5), 333–346. https://doi.org/10.1002/trtr.1228

Graves, M. F. (2015). Building a vocabulary program that really could make a significant contribution to students becoming college and career ready. In P. David Pearson & E. H. Hiebert (Eds.), *Research-based Practices for Teaching Common Core Literacy* (pp. 123-142). New York: Teachers College Press.

Guerrettaz, A. M., & Johnston, B. (2013). Materials in the classroom ecology. *Modern Language Journal*, *97*(3), 779–796. http://doi.org/10.1111/j.1540-4781.2013.12027.x

Hamayan, E., Genesee, F., & Cloud, N. (2013). *Dual language instruction from A to Z: Practical guidance for teachers and administrators*. Portsmouth, NH: Heinemann.

Handscombe, J. (1990). The complementary roles of researchers and practitioners in second language education. In B. Harley, P. Allen, J. Cummins, & M. Swain (Eds.), *The development of second language proficiency* (pp. 181-186). Cambridge, UK: Cambridge University Press.

Haneda, M. (2005). Functions of triadic dialogue in the classroom: Examples for L2 research. *The Canadian Modern Language Review, 62,* 313-333.

Harley, B. (1992). Patterns of second language development in French immersion. *Journal of French Language Studies, 2,* 159-183.

Harley, B., Allen, P., Cummins, J., & Swain, M. (Eds.) (1987). *Development of bilingual proficiency. Final Report. Volume II: Classroom Treatment.* Toronto, ON: Modern Language Centre, OISE/UT.

Harwood, N. (2010). Issues in materials development and design. In N. Harwood (Ed.), *English language teaching materials: Theory and practice*, pp. 3-30). New York City, NY: Cambridge University Press.

Hernández, A. M. (2015). Language status in two-way bilingual immersion: The dynamics between English and Spanish in peer interaction. *Journal of Immersion and Content-Based Language Education*, *3*(1), 102–126. http://doi.org/10.1075/jicb.3.1.05her

Howard, E., Christian, D., & Genesee, F. (2004). *The development of bilingualism and biliteracy from grades 3-5: A summary of findings from the CAL/CREDE study of two-way immersion education.* Center for Research on Education, Diversity and Excellence and Center for Applied Linguistics.

Johnston, B. (with Janus, L.) (2007). *Developing materials for less commonly taught languages.* Minneapolis, MN: Center for Advanced Research on Language Acquisition.

Krashen, S. (1981). *Second language acquisition and second language learning*. Oxford, UK: Pergamon.

Krashen, S., (1982). *Principles and Practice in Second Language Acquisition*. Oxford, UK: Pergamon.

Larson-Freeman, D. (1997). Chaos/complexity science and second language acquisition. *Applied Linguistics, 18,* 141-165.

Lenker, A., & Rhodes, N. (2007). Foreign language immersion programs: Features and trends over thirty-five years. *ACIE Newsletter*, (February), 1–8.

Lindholm-Leary, K., & Genesee, F. (2014). Student outcomes in one-way, two-way, and indigenous language immersion education. *Journal of Immersion and Content-Based Language Education*, *2*(2), 165–180. http://doi.org/10.1075/jicb.2.2.01lin

Llinares, A., & Lyster, R. (2014). The influence of context on patterns of corrective feedback and learner uptake: A comparison of CLIL and immersion classrooms. *The Language Learning Journal*, *42*(2), 181–194. http://doi.org/10.1080/09571736.2014.889509

Long, M. H., & Sato, C. J. (1983). Classroom foreigner talk discourse: Forms and functions of teachers' questions. *Classroom oriented research in second language acquisition*, 268-285.

Luke, C., de Castell, S., & Luke, A. (1989). Beyond criticism: The authority of the school textbook. In S. de Castell, A. Luke & C. Luke (Eds.), *Language, authority and criticism: Readings on the school textbook*. London: Falmer Press, 245–260.

Lyster, R. (1987). Speaking immersion. *The Canadian Modern Language Review*, *43*(4), 701–717.

Lyster, R. (2007). *Learning and teaching languages through content: A counterbalanced approach.* Philadelphia: Benjamins.

Lyster, R., & Rebuffot, J. (2002). Acquisition des pronoms d'allocution en classe de français immersive. *Acquisition et Interaction en Langue Étrangère, 17,* 51-71.

Lyster, R., & Tedick, D. J. (2014). Research perspectives on immersion pedagogy. *Journal of Immersion and Content-Based Language Education*, *2*(2), 210–224.

Mahone, A. (1985). *Bilingual education instructional and training materials. Field test results and final phase II report*. Office of Bilingual Education and Minority Languages Affairs, Washington D.C.

Maxwell, J. A. (2012). Methods: What will you actually do? In *Qualitative research design: An interactive approach* (pp. 87–120). Thousand Oaks, CA: SAGE Publications.

McDonough, J., Shaw, C., & Masuhara, H. (2013). *Materials and methods in ELT: A teacher's guide.* Oxford: Wiley-Blackwell.

McMillan, B., & Turnbull, M. (2009). Teachers' use of the first language in French immersion: Revisiting a core principle. In M. Turnbull & J. Dailey-O'Cain (Eds.), *First language use in second and foreign language learning* (pp. 15–34). Bristol, UK: Multilingual Matters.

McNeil, L. (2012). Using talk to scaffold referential questions for English language learners. *Teaching and Teacher Education*, *28*(3), 396–404. https://doi.org/10.1016/j.tate.2011.11.005

Mercer, N., & Littleton, K. (2007). *Dialogue and the development of children's thinking: A sociocultural approach*. London: Routledge.

Met. M. (1999, January). *Content-based instruction: Defining terms, making decisions.* NFLC Reports. Washington, DC: The National Foreign Language Center.

Miguel, N. M. (2015). Textbook consumption in the classroom: Analyzing a classroom corpus. *Procedia - Social and Behavioral Sciences*, *198*, 309–319. http://doi.org/10.1016/j.sbspro.2015.07.449

Montrul, S., & Perpiñán, S. (2011). Assessing differences and similarities between instructed heritage language learners and L2 learners in their knowledge of Spanish

tense-aspect and mood (TAM) morphology. *Heritage Language Journal, 8*(1), 90-133.

Montrul, S., & Potowski, K. (2007). Command of gender agreement in school-age Spanish-English bilingual children. *International Journal of Bilingualism, 11*(3), 301-328.

Moore, P., & Lorenzo, F. (2007). Adapting authentic materials for CLIL classrooms: An empirical study. *Vienna English Working Papers*, *16*(3), 28–35.

Moore, P., & Lorenzo, F. (2015). Task-based learning and content and language integrated learning materials design: process and product. *The Language Learning Journal*, *43*(3)*,* 334-357. http://doi.org/10.1080/09571736.2015.1053282

Morgan, B., & Martin, I. (2014). Toward a research agenda for classroom-as-ecosystem. *The Modern Language Journal*, *98*(2), 667–670. http://doi.org/10.1111/j.1540-4781.2014.12098.x

Morton, T. (2013). Critically evaluating materials for CLIL: Practitioners' practices and perspectives. In J. Gray (Ed.), *Critical Perspectives on Language Teaching Materials* (1st ed., pp. 111–136). Palgrave Macmillan UK.

Musumeci, D. (1996). Teacher-learner negotiation in content-based instruction: Communication at cross-purposes? *Applied Linguistics, 17,* 286-325.

My world geography. (2011). Upper Saddle River, NJ: Prentice Hall.

Netten, J. (1991). Towards a more language oriented second language classroom. In L. Malavé & G. Duquette (Eds.), *Language, culture and cognition* (pp. 284-304). Clevedon, UK: Multilingual Matters.

Nunan, D. (1989). Toward a collaborative approach to curriculum development: A case study. *TESOL Quarterly, 23,* 9-25.

Nunan, D. (1991). *Language teaching methodology: A textbook for teachers*. Prentice Hall.

Olson, D. R. (1989). On the language and authority of textbooks. In S. De Castell, A. Luke, & C. Luke (Eds.), *Language, authority and criticism: Readings on the school textbook* (pp. 233–244). London: Falmer Press. (Reprinted from Journal of Communication, 30, 186–196.)

Parker, J. E., Heitzman, S. M., Fjerstad, A. M., Babbs, L. M., & Cohen, A. D. (1995). Exploring the role of foreign language in immersion education. In F.R. Eckman, D.

Highland, P. Lee, J. Milcham & R. Rutakowski Weber (Eds.), *Second language acquisition theory and pedagogy* (pp. 235-253). Mahwah, NJ: Lawrence Erlbaum Associates, Inc. Publishers.

Patton, M. (2015). *Qualitative research and evaluation methods: integrating theory and practice.* Thousand Oaks: SAGE Publications.

Peréz-Cañado, M. L. (2012). CLIL research in Europe: Past, present, and future. *International Journal of Bilingual Education and Bilingualism, 15*, 315–341.

Potowski, K. (2004). Student Spanish use and investment in a dual immersion classroom: Implications for second language acquisition and heritage language maintenance. *The Modern Language Journal*, *88*, 75–101. https://doi.org/10.1111/j.0026-7902.2004.00219.x

Potowski, K. (2007). Characteristics of the Spanish grammar and sociolinguistic proficiency of dual immersion graduates. *Spanish in Context, 4*(2), 187-216.

Saldaña, J. (2009). *The coding manual for qualitative researchers*. Thousand Oaks, CA: SAGE Publications.

Salomone, A. (1992). Student-teacher interactions in selected French immersion classrooms. In E. Bernhardt (Ed.), *Life in immersion classrooms* (pp. 9-44). Clevedon, UK: Multilingual Matters.

Schegloff, E. (2007). *Sequence organization in interaction: A primer in conversation analysis*. Cambridge: Cambridge University Press.

Schleppegrell, M. J. (2001). Linguistic features of the language of schooling. *Linguistics and Education*, *12*(4), 431–459. http://doi.org/10.1016/S0898-5898(01)00073-0

Schleppegrell, M.J. (2004). *The language of schooling: A functional linguistics perspective*. Mahwah, NJ: Lawrence Erlbaum.

Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. NY: Palgrave Pres

Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York: Teachers College Press.

Shavelson, R.J., & Towne, L. (Eds.) (2002). *Scientific research in education.* Washington, DC: National Academy Press.

Shawer, S.F. (2010). Classroom-level curriculum development: EFL teachers as curriculum-developers, curriculum-makers and curriculum-transmitters. *Teaching and Teacher Education, 26,* 173-184.

Snow, M. A., Met, M., & Genesee, F. (1989). A conceptual framework for the integration of language and content in second/foreign language instruction. *TESOL Quarterly*, *23*(2), 201–217.

Stoecker, R. (1991). Evaluating and rethinking the case study. *The Sociological Review, 39*(1), 88-112.

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235-253). Rowley, MA: Newbury House.

Swain, M. (1988). Manipulating and complementing content teaching to maximize second language learning. *TESL Canada Journal*, *6*(I), 68–83. Retrieved from http://www.teslcanadajournal.ca/index.php/tesl/article/view/542

Swain, M. (1996). Integrating language and content in immersion classrooms: Research perspectives. *The Canadian Modern Language Review*, *52*(4), 529–548.

Swain, M., & Carroll, S. (1987). The immersion observation study. In B. Harley, P. Allen, J. Cummins, & M. Swain (Eds.), *Development of bilingual proficiency. Final report. Volume II: Classroom treatment* (pp. 190-316). Toronto, ON: Modern Language Centre, OISE/UT.

Swain, M., & Lapkin, S. (2000). Task-based second language learning: The uses of the first language. *Language Teaching Research*, *4*(3), 251–274. http://doi.org/10.1191/136216800125087

Swain, M., Steinman, L., & Kinnear, P. (2015). Sociocultural theory in second language education : an introduction through narratives. *MM Textbooks*, xvii, 174 .

Tarone, E., & Swain, M. (1995). A sociolinguistic perspective on second language use in immersion classrooms. *Modern Language Journal*, *79*(ii), 166–178.

Tesch, R. (1990). Qualitative research: Analysis types and software tools. New York: Falmer Press

Tomlinson, B. (Eds.). (1998). *Materials development in language teaching*. Cambridge, UK: Cambridge University Press.

Tomlinson, B. (2012). Materials development for language learning and teaching. *Language Teaching*, *45*(2), 143-179.

Tsui, A. (2003). Understanding expertise in teaching: Case studies of ESL teachers. New York: Cambridge University Press.

Tudor, I. (2001). *The dynamics of the language classroom*. Cambridge: Cambridge University Press.

Tudor, I. (2003). Learning to live with complexity: Towards an ecological perspective on language teaching. *System*, *31*(1), 1–12. http://doi.org/10.1016/S0346-251X(02)00070-2

van Lier, L. (1996). *Interaction in the language curriculum: Awareness, autonomy and authenticity*. London: Longman.

van Lier, L. (1997). Observation from an ecological perspective. *TESOL Quarterly*, 31, 783–787.

van Lier, L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Norwell, MA: Kluwer Academic Publishers.

van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy* (2nd ed.). London, Ontario, Canada: Althouse.

Verplaetse, L. S. (2000). Mr. wonder-ful: Portrait of a dialogic teacher. In J. K. Hall & L. S. Verplaetse (Eds.), *Second and foreign language learning through classroom interaction* (pp. 221–241). Mahwah: NJ: Lawrence Erlbaum.

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner & E. Souberman, Trans.). Cambridge, MA: Harvard University Press.

Walker, C. L., & Tedick, D. J. (2000). The complexity of immersion education: Teachers address the issues. *The Modern Language Journal*, *84*(1), 5–27.

Wiggins, G. & McTighe, J. (2005). *Understanding by design* (Expanded 2nd Ed). Alexandria, VA: ASCD.

Yakhontova, T. (2001). Textbooks, contexts, and learners. *English for Specific Purposes*, 20, 397– 415.

Yin, R.K. (2014). *Case study research: Design and methods*. Thousand Oaks, CA: Sage Publications.

Zwiers, J., O'Hara, S., & Pritchard, R. (2014). Conversing to fortify literacy, language, and learning. *Voices from the middle, 22*(1), 10-14.

Appendix A

Corinne Mathieu <mathi334@umn.edu>

1610E95961 - PI Mathieu - IRB - Exempt Study Notification

2 messages

irb@umn.edu <irb@umn.edu> Thu, Nov 10, 2016 at 11:09 AM
To: mathi334@umn.edu

TO : djtedick@umn.edu, mathi334@umn.edu,

The IRB: Human Subjects Committee determined that the referenced study is exempt from review under federal guidelines 45 CFR Part 46.101(b) category #2 SURVEYS/INTERVIEWS; STANDARDIZED EDUCATIONAL TESTS; OBSERVATION OF PUBLIC BEHAVIOR.

Study Number: 1610E95961

Principal Investigator: Corinne Mathieu

Title(s):
Spanish Immersion Materials and Secondary Classroom Ecology

This e-mail confirmation is your official University of Minnesota HRPP notification of exemption from full committee review. You will not receive a hard copy or letter.

This secure electronic notification between password protected authentications has been deemed by the University of Minnesota to constitute a legal signature.

The study number above is assigned to your research. That number and the title of your study must be used in all communication with the IRB office.

Research that involves observation can be approved under this category without obtaining consent.

SURVEY OR INTERVIEW RESEARCH APPROVED AS EXEMPT UNDER THIS CATEGORY IS LIMITED TO ADULT SUBJECTS.

This exemption is valid for five years from the date of this correspondence and will be filed inactive at that time. You will receive a notification prior to inactivation. If this research will extend beyond five years, you must submit a new application to the IRB before the study's expiration date. Please inform the IRB when you intend to close this study.

Upon receipt of this email, you may begin your research. If you have questions, please call the IRB office at (612) 626-5654.

You may go to the View Completed section of eResearch Central at http://eresearch.umn.edu/ to view further details on your study.

The IRB wishes you success with this research.

Appendix B

Assent form: Teacher

INFORMATION SHEET FOR RESEARCH

Spanish Immersion Materials and Secondary Classroom Ecology

You are invited to be in a research study of the role(s) of classroom materials in a secondary Spanish immersion class. You were selected as a possible participant because you are a teacher in a secondary Spanish immersion classroom. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Corinne Mathieu, Curriculum & Instruction, University of Minnesota.

Procedures:

If you agree to be in this study, we would ask you to do the following things:

The researcher will be observing class every day for an entire academic unit, about 3-4 weeks. The classes will be audio-recorded so that I may reflect on how the materials relate to content and language learning and appear to correspond to classroom interaction. You will not need to do anything out of the ordinary or modify your teaching in any way. I will also ask that you participate in two semi-structured interviews (approximately 1 hour each) with me before and after the observations. In addition, I will hope to engage with you in brief, informal conversations during the period of observations.

Confidentiality:

The records of this study will be kept private. In any sort of report that I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only I will have access to the records. Audio recordings will only be accessible to me and will be erased after five years.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota or with Plymouth Middle School. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Compensation:

At the end of the study I will offer you a modest token of appreciation in the form of a $50 gift card to a store or place of your choice. Even if you decide to withdraw from the study before it's complete, you will still be given the gift card.

Contacts and Questions:

The researcher conducting this study is: Corinne Mathieu. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at 125 Peik Hall, 159 Pillsbury Dr SE, Minneapolis, MN 55455, 608-213-9249, mathi334@umn.edu. The researcher's advisor is Dr. Diane Tedick. She can be reached at 612-625-1081, djtedick@umn.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

You will be given a copy of this information to keep for your records.

STUDENT INFORMATION SHEET FOR RESEARCH

Spanish Immersion Materials and Secondary Classroom Ecology

You are invited to be in a research study on the role(s) of classroom materials in a secondary Spanish immersion class. You were selected as a possible participant because you are a student in XXXXX's class. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Corinne Mathieu, Curriculum & Instruction, University of Minnesota.

Procedures:

If you agree to be in this study, I would ask you to do the following things:

You will attend and participate in your regularly scheduled classes as usual. The researcher will be observing class every day for an entire academic unit, about 3-4 weeks. The researcher will be taking notes during the observations about the class's behavior in relation to the materials used. The classes will be audio-recorded so that I may reflect on how the materials relate to content and language learning and appear to correspond to classroom interaction. You will not need to do anything out of the ordinary nor interact with the researcher in any way.

Confidentiality:

The records of this study will be kept private. In any sort of report that I might publish, I will not include any information that will make it possible to identify you. Research records will be stored securely and only researchers will have access to the records. Audio recordings will only be accessible to the researcher and will be erased after five years.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota or with Plymouth Middle School. If you decide to participate, you are free to withdraw at any time without affecting those relationships. If you choose not to participate or withdraw from the study, the researcher will refrain from taking notes on your behavior or interactions during the class.

Contacts and Questions:

The researcher conducting this study is: Corinne Mathieu. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at 125 Peik Hall, 159 Pillsbury Dr. SE, Minneapolis, MN 55455, 608-213-9249, mathi334@umn.edu. The researcher's advisor is Dr. Diane Tedick. She can be reached at 612-625-1081, djtedick@umn.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

You will be given a copy of this information to keep for your records.

PARENT INFORMATION SHEET FOR RESEARCH

Spanish Immersion Materials and Secondary Classroom Ecology

Your son or daughter has been invited to be in a research study on the role(s) of classroom materials in a secondary Spanish immersion class. He or she was selected as a possible participant because he or she is a student in XXXX's class. I ask that you read this form and contact me with any questions that you may have.

This study is being conducted by: Corinne Mathieu, Curriculum & Instruction, University of Minnesota.

Procedures:

If you agree for your son or daughter to be in this study, I would ask that he or she do the following things:

He or she will attend and participate in regularly scheduled classes as usual. The researcher will be observing class every day for an entire academic unit, about 3-4 weeks. The researcher will be taking notes during the observations about the class's behavior in relation to the materials used. The classes will be audio-recorded so that I may reflect on how the materials relate to content and language learning and appear to correspond to classroom interaction. Your son or daughter will not need to do anything out of the ordinary nor interact with me in any way.

Confidentiality:

The records of this study will be kept private. In any sort of report that I might publish, I will not include any information that will make it possible to identify your son or daughter. Research records will be stored securely and only researchers will have access to the records. Audio recordings will only be accessible to the researcher and will be erased after five years.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota or with Plymouth Middle School. If you decide to participate, you are free to withdraw at any time without affecting those relationships. If you choose not to participate or withdraw from the study, the researcher will refrain from taking notes on your son or daughter's behavior or interactions during the class.

Contacts and Questions:

The researcher conducting this study is: Corinne Mathieu. If you have questions, **you are encouraged** to contact her at 125 Peik Hall, 159 Pillsbury Dr. SE, Minneapolis, MN 55455, 608-213-9249, mathi334@umn.edu. The researcher's advisor is Dr. Diane Tedick. She can be reached at 612-625-1081, djtedick@umn.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

You will be given a copy of this information to keep for your records.

Appendix C

Observation Protocol

Date:
Topic:

Material(s):

Detailed observations:

Content instruction

Language instruction

Content/language integration

Language use

Appendix D

Pre-Observations Interview questions for "Spanish Immersion Materials and Secondary Classroom Ecology" study

1. What different types of instructional materials are used most frequently in your class?

2. How are materials chosen for your classroom? Who decides what materials you will use?

3. In your opinion, which materials are the most effective at reaching the academic/linguistic objectives that you have set for your class? In what ways do they support the achievement of your objectives? What types of materials seem to be the most effective for student learning?

4. In what ways do materials factor into your daily lesson planning?

5. In what ways do the materials relate to the curriculum?

6. What materials do you plan to use in this unit, and how? Why did you select these materials?

7. Have you observed some types of materials engaging students more, leading to more classroom interaction?

Post-Observations Interviews Questions

1. In what ways was the use of materials in this unit typical to your class and what ways might it have been unique?

2. In your opinion, how did the materials affect students' academic learning in this unit? How did they affect their language development?

3. Some immersion educators talk about "Language and content integration"? How do you see language and content integrated in your classroom? How do materials affect your method of language/content integration?